SOUND DESIGN

FBT Audio Contractor

General Catalogue 2009/2010

CIE-group
www.cie-group.com

FBT Audio Contractor

SOUND DESIGN

2009-2010

Sound Design Project
for the Municipal Casino in Venice

- ***Settings:***
  12 rooms (max size 400 m²)
- ***Requirements:***
  Amplification system designed to select
  4 music sources for 4 independent zones.
  Minimal visual impact of loudspeakers
- ***Operating system:***
  1 MMS4004 4x4 matrix
  1 MMZ8004 mixer featuring 4 output buses
- ***Power amplifiers:***
  3 MCA2240A multi-channel power amp.
- ***Loudspeakers:***
  30 STUDIO4/BT loudspeakers, 2-way, 60W RMS applied to the ceiling
- ***Microphone bases:***
  1 MBT8004 unit for selected announcements in individual zones and generating automatic alarm messages

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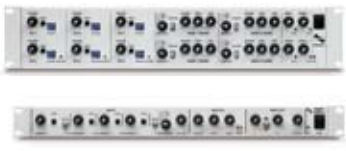

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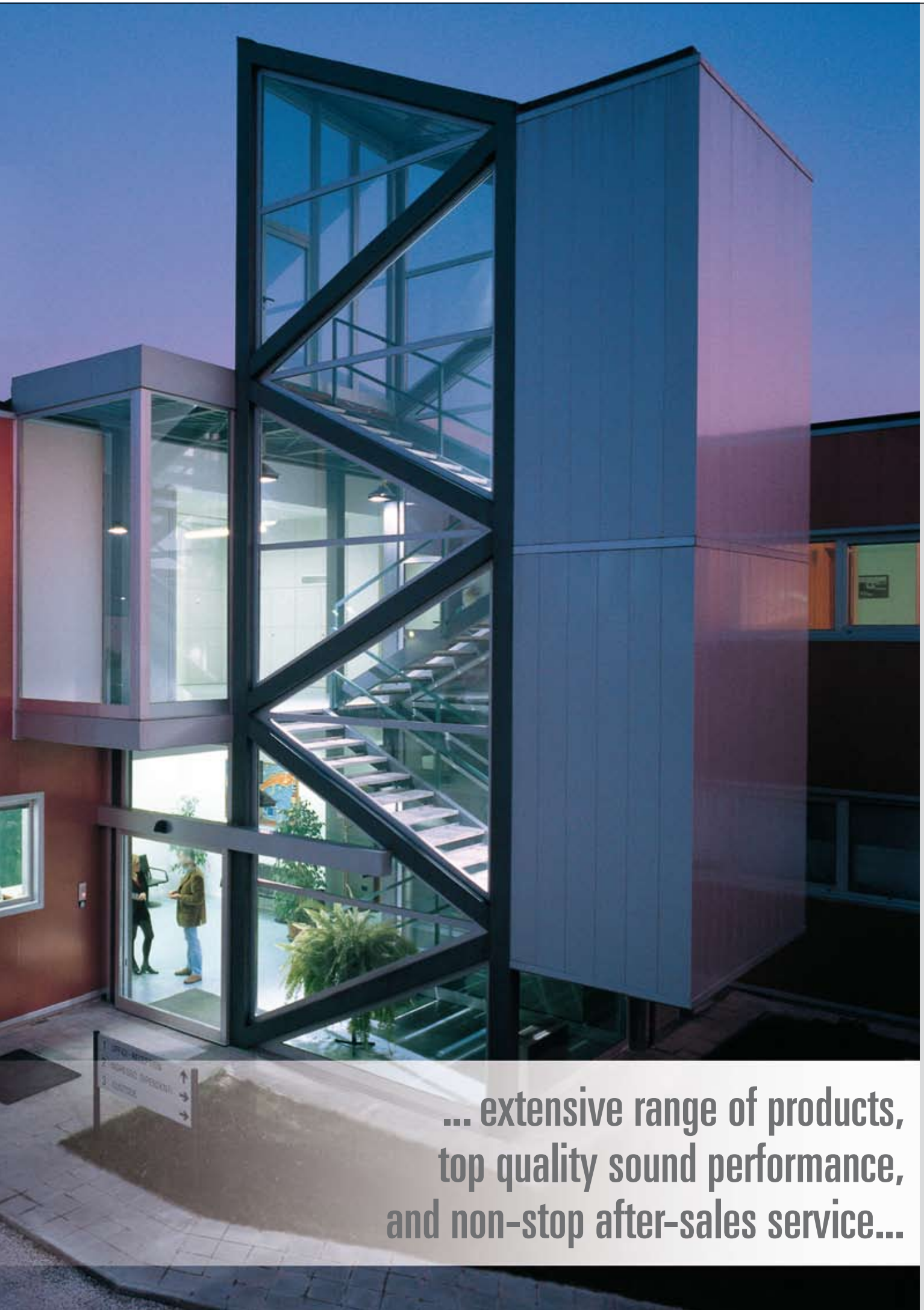
Highly specialised in ambient amplification systems

Wherever we go, we like to be heard. We aim for total customer satisfaction. We believe in fully customised sound-designs.
To provide high quality sound for every setting. We achieve this thanks to our highly flexible range, customised designs and constant research into innovation.

Audio Contractor: a young and wise leader

This Brand, with a strategic and productive lay-out of the latest generation, was officially set up in 1998 as a Division of the FBT Group. Highly specialised in ambient amplification systems, Audio Contractor benefits from all the know-how and extensive expertise acquired by the parent company in over 40 years of business. In a short space of time, Audio Contractor has made its mark on the market, integrating and implementing a winning combination of strengths: attaining total customer satisfaction, constant innovation, offering an extensive range of products, top quality sound performance, and non-stop after-sales service 365 days a year.



... extensive range of products,
top quality sound performance,
and non-stop after-sales service...

... an original outlook on production and service...

Sound design: stylish designs

At the very heart of the corporate philosophy, the concept of "Sound Design", an original outlook on production and service aiming for standards of excellence in terms of technology and acoustics along with the "custom-made" design of the application venue - including theatres, conference halls, shopping centres, factories and hospitals. The major strengths of the brand, i.e. top quality, new developments and maximum reliability all contribute to offer an extensive and constantly updated range of products, distinguished by a stylish aesthetic look that epitomises the "made in Italy".

Music in the genes

The love of music and the application of this love, in an industrial context, to sound reinforcement are part of FBT's genetic make-up. A Group destined for success, because it traces its origins back to a special, unique part of the world in the Marche region called Recanati, where music has always bee an essential part of the very fabric of society. Originally a small workshop established in the Nineteen Sixties, the Group is today recognised on a national and international scale as a leader in the manufacture of a variety of equipment, ranging from the Professional Audio Equipment amplification systems to the Audio Contractor ambient amplification, and also the Musical Instrument Distribution division, with a continuous growth trend.

...a stylish aesthetic look that epitomises the "made in Italy"...

Sound systems for large venues...

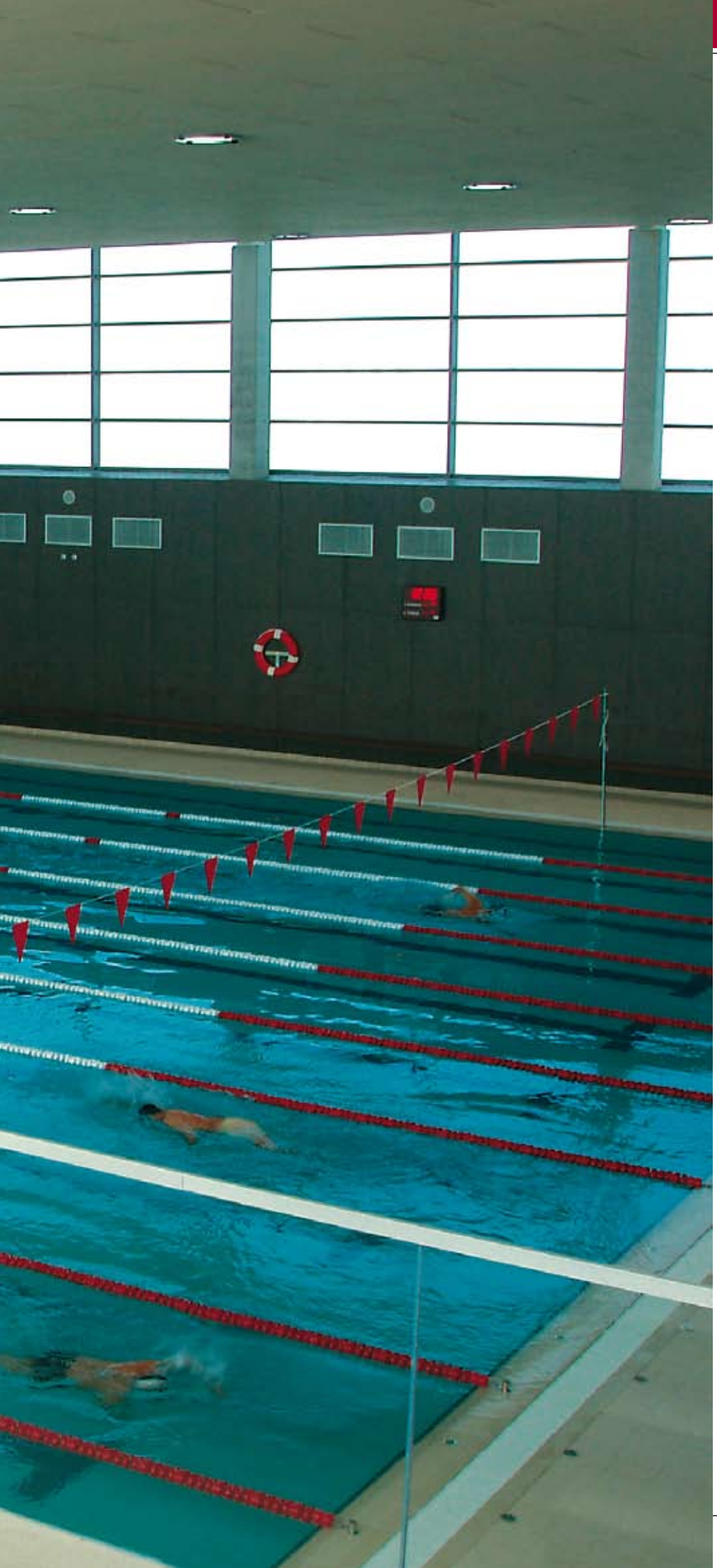
Clear announcements.
Hi-Fi music programming. Integrated control consoles, designed to create certain "frequencies" in every setting. Customised equipment.
To make our customers feel even more at home, both in Italy and abroad, we design integrated sound systems. To reflect and interpret the sound "image" of every venue.

Thanks to a sturdy know-how geared towards attaining the utmost standards of excellence, Audio Contractor provides sound designs to meet the requirements of every "leading" venue.
The Eighteenth-Century Villa Foscarini - Cornaro in Gorgo al Monticano - Treviso, the "Le Brentelle" Shopping Centre in Rubano - Padua and the Municipal Casino in Venice, overlooking the Grand Canal, are but a few of the most prestigious projects completed.

Solutions for professionals
All of which are stubbornly devised to integrate the use of the most advanced technologies, with the smoothest aesthetic and architectural blend.

Sound Design Project >
Boutique Cartier in Rome - via Condotti - Italy

Solutions for professionals...



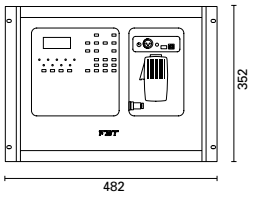
FBT Audio Contractor

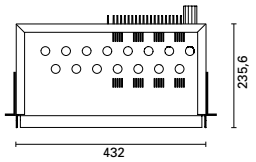
SECURITY AND EMERGENCY SYSTEMS EN60849

Polideportivo Usabal
Tolosa - Spain

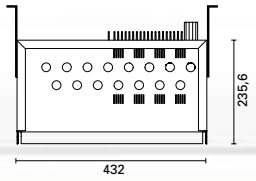
VAIS 1000.2

MODULAR INTEGRATED SYSTEM





RACK MOUNTING



WALL MOUNTING

Modular integrated system for voice evacuation in emergency condition

VAIS 1000.2 is a high-quality modular voice alarm system specially designed to simplify the provision of a fully **EN 60849** and **EN54-16** compliant voice alarm system.
Voice evacuation system main function is clear and intelligible voice messages generation, whose purpose is to advice people of the presence of fire through the fire detection system to which audio system is connected.
VAIS 1000.2 single module can be configured as Master or as Slave or as Extension. Slave modules are to increase zones number: connection of the modules, Master, Slave and Extension, with the same fire detection system, makes voice evacuation system **VAIS 1000.2** the best choice not only for single-zone application but also for medium-large installation such as offices, shopping centres, hotels and community centres.
Extension modules are generally used to give more power to additional loudspeakers in big areas such as warehouses, shopping centres, buildings, cinemas. They give more flexibility in differentiating announcements and background music, as they're equipped with their own input for these functions.

FBT AUDIO CONTRACTOR
VAIS 1000.2 is fully compliant to the Norm EN 60849 and therefore is capable to:
- work in danger situations
- indicate any faults
- transmit audio alarm message
- work without primary power supply with internal battery
- be connected with fire detection system

VAIS 1000.2

MODULAR INTEGRATED SYSTEM

Within one integrated and compact wall and standard 19" rack-mountable enclosure, VAIS1000 comprises:

- matrix with prioritized preamplifier circuit comprising:
  - 6 input channels for background music (auxiliary CD/Tuner/Tape and USB input for MP3 music recorded inside an USB Flash disk)
  - Fireman microphone input to give instructions for correct evacuation
  - paging desk input
  - internal MP3 evacuation and alert messages generator
  - external message generator
- 1 digital message generator
- 1 digital message recorder on internal non volatile memory. You can record the messages from 3 audio analog source: external auxiliary microphone, Fireman microphone, auxiliary input for CD/TAPE/TUNER. There is also the possibility to transfer MP3 audio message in the internal memory with the personal computer by USB port
- Fireman microphone: you can use it in danger situations for announcements. The VAIS 1000M includes diagnostic circuits to detect this microphone fault
- 2 audio power amplifiers with isolated output transformer (100V rms)
- 1 monitored spare audio amplifier used to substituite the broken amplifier automatically
- Secondary power supply for VAIS 1000.2 with one 12V 33Ah battery for 24 hours in stand-by and 30 minutes full operative with active alarm
- Battery charger (temperature compensated)
- Fire detection system interfaces, used to:
  - Receive the command for local and global emergency messages activation
  - Receive the command for local and global alert messages activation
  - send the command of the fault of the sound system
  - send the command of the sound system in emergency mode

  There are 2 physical interface for the above information exchanges:
  - RS485
  - 4 logical controlled input and 2 logical controlled output
- RS485 network between VAIS 1000.2 module and MBT VAIS 1008 paging desk
- LCD 16x4 display
- PC connection by USB port for system setup
- RJ45 Network connector. You can create an RS485 network with 16 VAIS 1000.2 and 4 MBT VAIS 1008 paging desk for at maximum of 8 zones
- Quick paging push buttons and audio source selection in emergency condition
- RJ45 Network connector. You can create an RS485 network with 16 VAIS 1000M and 4 MBT VAIS 1008 paging desk for at maximum of 8 zones
- Quick paging push buttons and audio source selection in emergency condition
- Push buttons for system monitor:
  - Fault: displays any fault
  - Alarm: monitor of emergency condition: it's possible to give instructions by means of fireman microphone and/or send pre-recorded alarm and/or alert messages
  - Quiescent: system maintenance to test all functions. The zone under maintenance is not available for microphone paging but is fully operative in emergency condition
  - Disabled: to disable specific zone. Disabled zone is not operative in any case
- Single VAIS module internal status:
  - Primary power supply presence (230Vac)
  - Secondary power supply presence (12Vdc)
  - Module fault indication
  - Disabled condition indication
  - Master condition indication

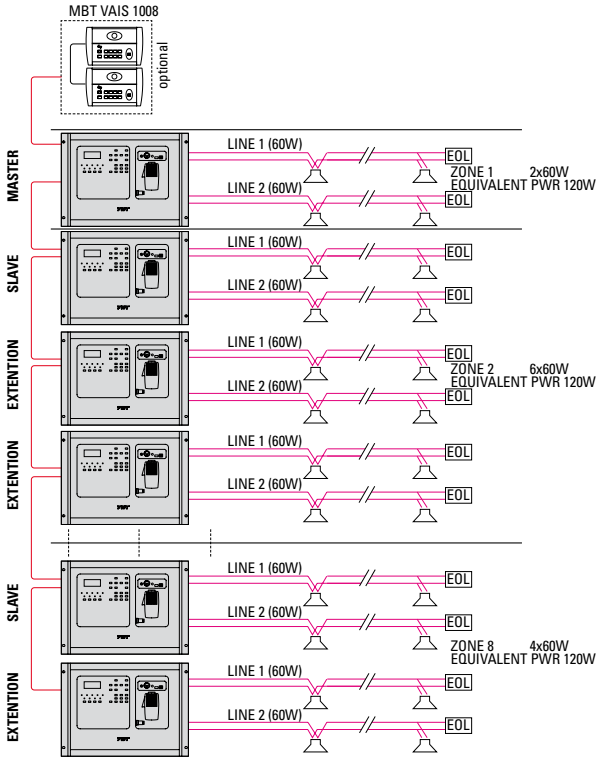
MBT VAIS 1008

Microphone paging desk

Cod. 25847

The MBT VAIS 1008 is an 8 zones desk microphone for normal paging announcements. It gives also some general information about the system (led) such as:

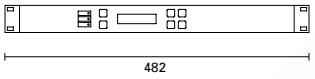
- Presence of the primary power supply
- Presence of the secondary power supply
- Fault of any part of the system
- Fully operation of the system



	VAIS 1000.2
Code	**25684**
Power supply	
Primary Power supply	230V 50Hz
Secondary Power supply	Battery 12V 33Ah
Internal battery charger (max current)	13.8V 2.5A (temperature compensating)
Amplifier	
Frequency response	100-20000 Hz
Harmonic distortion @ 1kHz	< 0.5%
Continuous power	2 x 60 W
Spare Amplifier Power	1 x 60 W
Max continuous output power with discharded battery	2 x 20W
Output	2 x 100V line speakers
Audio Source	
USB flash disk connector for MP3 background music	
Internal MP3 message generator	
Internal fireman microphone	
Tuner/CD/Tape input	
External fireman microphone	
External background music	
External message generator	
Fire System interface	
2 controlled output (Fault, emergency)	3.3k W (end of line resistor)
3 optoisolated controlled input (Local emergency message, General emergency message, Alert message)	
RS485 interface	
Message generator	
MP3 player (message generator, background music)	
MP3 Recorder (Aux microphone, Fireman microphone, Tuner/CD/Tape input	
MP3 recording time	30 s
Network	
Interface	RS485
Number of zones	8
Number of VAIS module	16
Display	4 lines x 16 characters
Dimension	482x352x236mm
Weight	18 kg
European Standards	EN60065, EN80449, EN60849, EN54-16

VA4Z

COMPACT MODULE



Compact audio system for Public Address and evacuation compliant to the EN60849 standard for small to medium installations

- Matrix composed of 4 audio inputs, 1 microphone input for emergency messages, 4 outputs for 4 independent zones
- Monitoring of four 100V loudspeaker zones (max 500W per zone)
- Monitoring of 4 amplifiers + one backup amplifier
- Full monitoring of the PSS console (capsule, screen, connections)
- Digital message player (4 messages, total length of 2 mins and 11 secs)
- Digital signal processor (DSP)
- Parametric equalization: 3 bands on input, 7 bands on output
- Individual control for each input and output level
- Separate controls for security levels
- Zones and sources labelling; 9 programmable priority levels

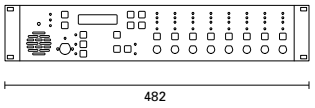
PSS 849 — Paging microphone console

Code 29483

	VA4Z
Code	29482
Audio input impedance	10kOhms
Input sensitivity	0dB
Audio output impedance	50ohms
Output levels	0dB
Maximum input/output level	+14dBv
Audio band	10Hz 24 bits
Distortion	0.02% to 1kHz
Output noise	<-84dBu Lin, <-88dBu A-weighted
Dynamic output	<-98dBu Lin, <-102dBu A-weighted
Maximum power per channel	500W
Amplifier gain measurement	1kHz 18kHz
Line impedance measurement	100V 1kHz 18kHz
Ground fault measurement	12 VDC 0 to 10MU
Digital audio messages	8kHz bandwidth 16 bits 16kHz sampling 4 messages, total length up to 2 mins 11 secs.
Alarm input/output contacts	4 alarm inputs (24V -72V activation) 4 output contacts (error due to lack of the line file component) 1 input contact (on/off control) 1 output contact (on/off control)
Serial connections	1 RS485 connection to PSS849 2 RS 232 connections to message console and/or to a PC
Power supply/Consumption	24 VDC power supplied by AL 10 external power supply unit (included) 300mA consumption if the console is not connected, 750mA with backup console
Colour	gray RAL 7016
Size	430x44x230mm

VA8Z

COMPACT MODULE



Audio system for Public Address and evacuation compliant with the EN60849 and BS5839 part 8 standards for small to medium installations

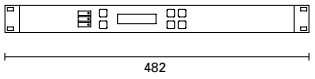
- It includes a DPS, a matrix, a digital message player, a fully monitored fireman microphone, amplifiers monitoring with switch to backup amplifier and loudspeaker line monitoring
- It can process and control one PSS security microphone console or up to 8 cascaded PSM microphones and 2 line inputs to two different channels (music + voice)
- Each input features volume control and equalizer
- Up to 16 digital messages can be downloaded and recorded as Wav files into VA8Z
- Two different messages can be played simultaneously in two different zones, with pre-programmed routing via 9 alarm inputs
- 8 output zones with a+b double line system. A music or voice signal is automatically or manually routed to each zone
- Music can be switched off in each zone separately
- It requires only two amplifiers, one for voice and one for music
- The music amplifier will act as a backup amplifier in case of the voice amplifier failure
- In compliance with EN60849 standard, all components and peripherals are constantly monitored without music interruption and all failures are recorded

SHM1 — Hand-held Firemen microphone

Code 29484

- Red colour for general calls or zones or group of zones calls
- EN60849 compliant
- Included in VA8Z

	VA8Z
Code	**29703**
0 dB Inputs/Outputs	
Micro. input imped. (bal., CAT5 terminal)	10Kohm
Input sensitivity	0dB
Music input impedance (RCA terminal)	10Kohm
Input sensitivity	0dB
Audio output impedance (bal., screw terminal)	50ohm
Output levels	0dB
Maximum input/output level	+14dBu
Audio bandwidth	da 10Hz to 22kHz
Sampling	48kHz 24 bits
Distortion	da 0.02% to 1kHz
Output noise	<-84dBu Lin, <-88dBu
Inputs/Outputs	
Maximum power	500W per VA8Z
Amplifier gain measurement	18kHz
Line impedance measurement	100V 18kHz
Ground fault measurement under	12 VDC 0 a 10 Mohms
Digital-audio messages	
Bandwidth	da 20 Hz a 8 kHz
Sampling	16 kHz 16 bits
total length	45 mins
Alarm/Contact Inputs Outputs	
Alarm inputs	9
8 PA contact inputs	8
2 contact input	power fault or battery
Contact outputs	8
Contact output (on/off control)	2
Serial connections	
Connection to PSSxx DT or PSM	1 RS485
Connection to next VA8Z module	1 RS485
For third party control (MOD BUS)	1 RS232
Ethernet port for PC communications VA8Z Module Size	
Colour	Metal enclosure: 2U 19" grey RAL 7016
Size	430x88x230mm



Audio system for Public Address and evacuation compliant with the EN60849 standard for small to medium installations

- Matrix composed of 4 audio inputs, 1 microphone input for emergency messages, 4 outputs for 4 independent zones
- This system includes the cascading of VA4ZM master module and one or several VA4ZS slave modules
- It extends the capacity of the whole system to 288 inputs for 256 outputs
- Up to 12 digital messages can be downloaded and recorded as Wav files. Four messages can be played simultaneously in different zones, with pre-programmed routing thanks to 4 alarm inputs
- In compliance with EN60849 standard, all components and peripherals are constantly monitored without music interruptions and all failures are recorded

Audio system for Public Address

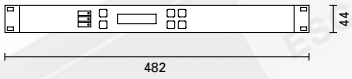
- It has the same features as VA4ZM and, in addition, it features the automatic gain control: the sensing microphone (PABFMP) can be connected to one of the audio inputs
- It will allow VA4Z to carry out an intelligent measure of the noise level, adapting the gain of the corresponding zones

PSS DT

Paging microphone console

PSS24DT Code 27835
PSS96DT Code 31208
PSM8 Code 29972
PMM-JB Code 29973

	VA4Z M VA4Z XM
Code	**27827**
0 dB Inputs/Outputs	
Audio input impedance	10Kohm
Input sensitivity	0dB
Audio output impedance	50Kohm
Output levels	0dB
Maximum input/output level	+14dBu
Audio band	da 10Hz a 22kHz
Sampling	48kHz 24 bits
Distortion	da 0.02% a 1kHz
Output noise	<-84dBu Lin, <-88dBu A-weighted
Dynamic output	>98dBu Lin, >102dBu A-weighted
100 V Inputs/Outputs	
Maximum power per channel	500W per VA8Z
Amplifier gain measurement	1kHz 18kHz
Line impedance measurement :	100V 18kHz
Ground fault measurement	12 VDC 0 a 10 Mohms
Digital audio messages	16 bits 16kHz sampling 4 messages, total length up to 2 mins 11 secs.
Bandwidth	8kHz
Sampling	16kHz 16 bits
Alarm input/output contacts	
Alarm inputs (24V -72V activation)	4
Output contacts (error due to lack of the line file component)	4
Contact input	1 power fault or battery back up fault
Output contact (on/off control)	1
Serial connections	
Connection to PSS849	1 RS485
Connections to message console	2 RS232
Connections to PC	2 RS232
Colour	Gray RAL7016 2 RU 19"
Dimensions (WxHxD)	430x88x230mm



Slave module for Public Address and evacuation compliant with the EN60849 standard for small to medium installations

- Matrix composed of 4 audio inputs, 1 microphone input for emergency messages, 4 outputs for 4 independent zones.

Optional switching module

- Maintains the emergency microphone facility to the VA4Z
- In case of failure of one or more master or slave units, it will automatically connect one PSS microphone station directly to amplifier input, allowing users to make an all-call announcement
- For each zone it allows a+b wiring on same amplifier: when two loudspeaker lines are used in a zone, they can be connected to the same amplifier and this module will ensure the separate line surveillance, in compliance with the EN60849 and BS5839 part 8 standards

Slave module for Public Address audio system

- It has the same features as VA4ZS and, in addition, it features automatic gain control: the sensing microphone (PABFMP) can be connected to one of the audio inputs
- It will allow VA4Z to carry out an intelligent measure of the noise level, adapting the gain of the corresponding zones

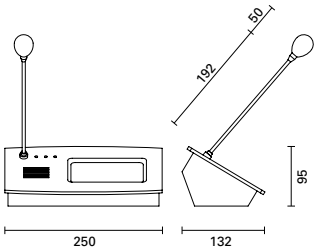
PSS DT — Paging microphone console

PSS24DT Code 27835
PSS96DT Code 31208
PSM8 Code 29972
PMM-JB Code 29973

	VA4Z S	VA4Z SU	VA4Z XMS
Code	**27828**	**29415**	
0 dB Inputs/Outputs			
Audio input impedance	10Kohm		
Input sensitivity	0dB		
Audio output impedance	50Kohm		
Output levels	0dB		
Maximum input/output level	+14dBu		
Audio band	from 10Hz to 22kHz		
Sampling	48kHz 24 bits		
Distortion	da 0.02% a 1kHz		
Output noise	<-84dBu Lin, <-88dBu A-weighted		
Dynamic output	>98dBu Lin, >102dBu A-weighted		
100 V Inputs/Outputs			
Maximum power per channel	500W per ogni VA8Z		
Amplifier gain measurement	1kHz 18kHz		
Line impedance measurement	100V 18kHz		
Ground fault measurement	12 VDC 0 a 10 Mohms		
Digital audio messages	4 messages, total length 2 mins 11 secs		
Bandwidth	8kHz		
Sampling	16kHz 16 bits		
Alarm input/output contacts			
Alarm inputs (24V -72V activation)	4		
Output contacts (error due to lack of the line file component)	4		
Contact input	1 power fault or battery back up fault		
Output contact (on/off control)	1		
Serial connections			
Connection to PSS849	1 RS485		
Connections to message console	2 RS232		
Connections to PC	2 RS232		
Colour	Grey RAL7016 2 RU 19"		
Dimensions (WxHxD)	430x88x230mm		

PSS DT

MICROPHONE CONSOLES



Paging microphone console

- Interface for VA4Z modules combining all functions required by both EN60849 and BS5839 part 8 standards
- Backlit touch screen, can be configured using a PC or using the control keys and the LCD screen of the VA4Z module to which it is connected
- Different zones can be assigned to distinct buttons. It is also possible to name zones and groups of zones, assign priority, access to different messages, adjust levels, it features pre-call chime (ding-dong), PTT (press to talk), music sources activation and routing.
- The LCD screen provides an overall view of busy zones and active sources
- Internal monitor loudspeaker for listening to current or pre-recorded messages
- Fully monitored console (microphone capsule, screen, audio and RS485 lines, power supply)
- Any failure is detected, located and indicated clearly on the screen

	PSS849	PSS24DT	PSS96DT	PSM8	PMM-JB
Code	29483	27835	31208	29972	29973

IDA SEC

Microphone surveillance interface compliant with the EN60849 standard
Code 27829

SHM-1

AUDIO SYSTEMS

Handheld firemen microphone
Code 29484

- Used for all call, group or zone calls, colour Red
- Surveillance compliant to EN60849 standards is carried out through the IDA-SEC interface

SPM-1

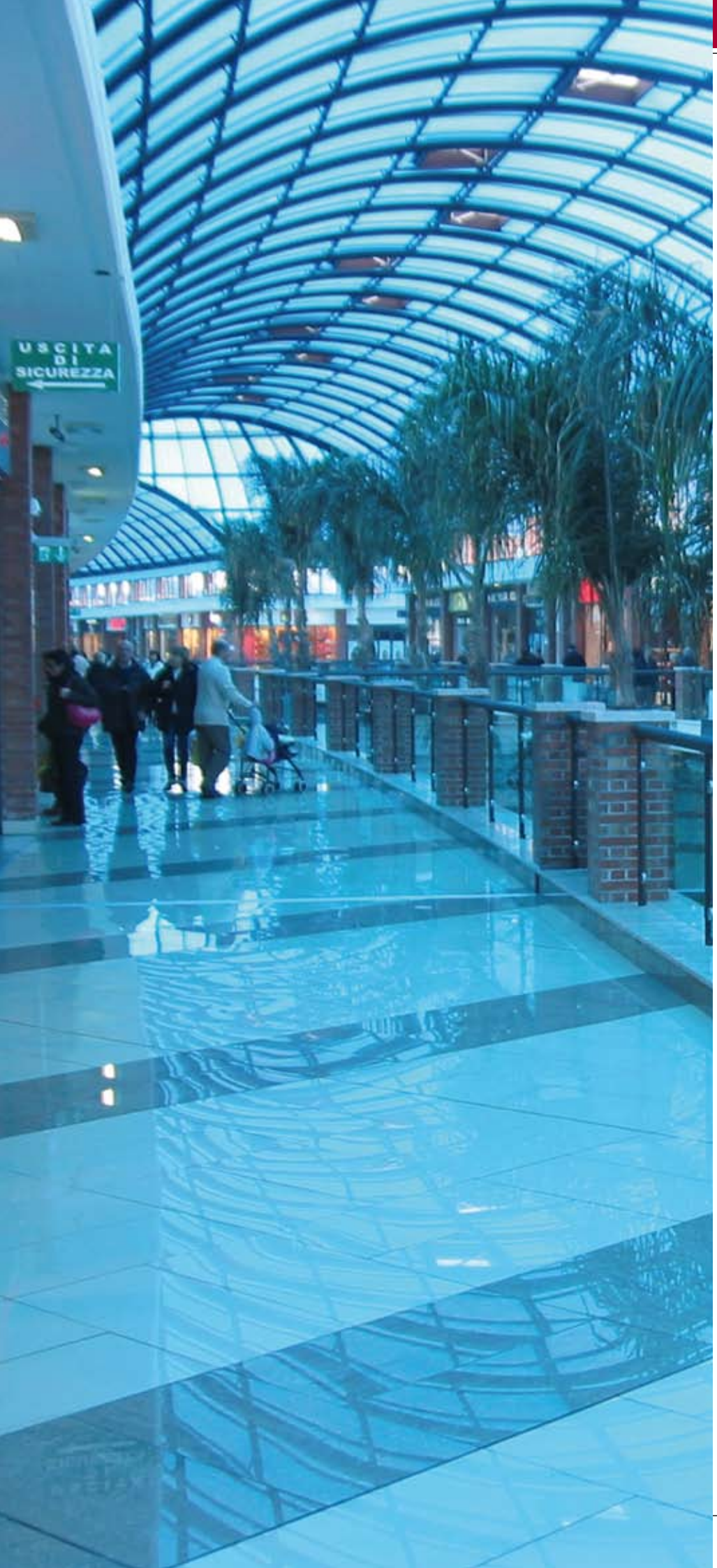
Firemen desk microphone console
Code 27831

- Used for all call, group or zone calls, colour Red
- Surveillance compliant to EN60849 standards is carried out through the IDA-SEC interface

IDA SEC

SHM-1

SPM-1



FBT Audio Contractor

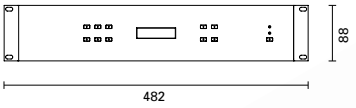
AUDIO MATRIX

SIMPLAY

Sound Design Project
Shopping Centre "I Portali"
in Sicily

MMZ 6020

AUDIO MATRIX



6-in x 6-out matrix for the control and amplification of 6 audio zones

- 4 stereo inputs with link to connect another matrix (Tape, Tuner, CD, Aux)
- 2 RS-485 connectors for the connection of two paging microphone consoles (MBT 6000)
- 1 XLR-F (Aux Mic) input allows to connect a microphone input or a MB-T 6400 S, BF-T5043L console and can have priority over the RS-485 Mic input; moreover, 24V Phantom power is available on this input
- 6 20Wrms amplifiers, each with 4ohm minimum output impedance
- 6 RS-485 connectors (Zone Remote Control) for the connection of local remote controls that, trough the IR remote control, allow to adjust: volume, high and low tones, power on/off and music programme selection (Tape, etc.)
- 1 2x16 character display allowing to view the status of the 6 audio zones

MMZ 6000

6-in x 6-out matrix for the control and amplification of 6 audio zones

- Same features as the MM Z 6020 matrix, without the power outputs necessary for driving the loudspeakers

TRC 6000 — Kit

Kit including a TX 6000 transmitter (IR remote control) and a RX 6000 IR receiver code 31085

- The maximum operation distance between the transmitter and the receiver is 20 m; no obstacles (unless transparent) can be placed between the transmitter and the receiver • The zone transmitter allows to adjust: volume, high and low tones, power on/off and input selection (tape, tuner, etc.)
- The receiver is connected to the matrix through a 4-conductor telephone cable (max. length 500 m) ending with the RJ-45 connector (PIN 1,2,3,4)

MBT 6000 — Microphone console

Microphone console designed for the MMZ 6000/6020 matrixes; it can be connected to RS-485 interface
Code 31083
see page 36

	MMZ 6020	MMZ 6000
Code	**31081**	**31082**
Maximum input level Tape, Tuner, CD, Aux	Gain min +10dBu (245V) max -5dBu (435V)	-
Aux Mic 1 input max gain	-70dB	-70dB
Phantom power	24V	24V
Treble	±14dB a 12kHz	±14dB
Bass	±15dB a 12kHz	±15dB
Left, Right, Sub/mono output level	+3dB	+3dB
Frequency response (@ -3dB)	30Hz÷50kHz	30Hz÷50kHz
tHd-n (@ L. R, Sub/mono outputs)	0,013%	0,013%
SPKR output power (@ 1% THD+N 20Hz÷20kHz)	6x20Wrms	-
Signal/Noise ratio	88dB typical	-
Power supply mute	-90dB min.	-
SPKR output protection	short circuit/thermal	-
Power supply	230Vac 50/60Hz	230Vac 50/60Hz
Power consumption	220Va	30Va
Dimensions	2 U rack	2 U rack

FBT Audio Contractor

CONFERENCE SYSTEMS
VOTING
SIMULTANEOUS TRANSLATION

Sound Design Project
for Council Chamber - Pescara

CONFERENCE SYSTEM RX 2300

MAIN UNIT - VOTING - VIDEO

RX M2300
Main unit
Code 29106

- 3 CPU and 3 DSP Embedded hardware structure, more reliable and faster to operate
- Digital audio technique, near-CD sound quality
- Digital audio transfer technique and point to point connection mode. The remote transmission will not influence sound quality. The distance between two units can reach 150 m
- Automatic test and recovery facility
- According to the location of equipment connection , it will automatically adjust the ID No
- 8 Inch LCD, Italian and English menu, any language can be ordered
- Control of all the conference functions through panel navigation keyboard
- "PnP" Support
- Built in 7 frequency, 12dB digital Mixer to adjust output signal's tones
- MIC management mode:
- limited mode, to set the number of delegates that can speak at the same time (1/2/3/4/5/6)
- FIFO mode, microphone key control with override of the active microphones
- Microphone key, with "request-to-speak" registration (AUTO)
- Voice-activated microphones
- 4× (6P-DIN) trunk-line cable outlets. Each outlet can accommodate 30 PCF, thus each main unit can accommodate a maximum of 120 PCF
- System capacity can be extended by connecting the extension unit. The max. capacity is 65335 units
- The system can implement automatic video tracking when used with cameras
- The system can sign-in voting when used with the main unit for voting
- The system can transmit 4/8/16/64 languages when used with the main unit for simultaneous interpretation
- More than 200 language integrated; all unit LCDs display channel No
- In PC-control mode, more facilities can be used

RX B2300
Main unit for voting
Code 30143

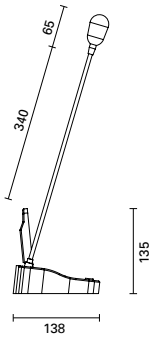
- PnP support
- A single main unit for voting can connect 200-500 voting units. 65335 units can be connected via extension
- It supports sign-in and later sign-in, and displays sign-in situation in real time
- In combination with the corresponding software modules, various forms of voting can be implemented:
  - Parliamentary: agree/oppose/ abstain, Pass-rate setup
  - Multi choice/ Opinion poll: 1/ 2/ 3/ 4/ 5
  - Audience response/ Rating: --/ -/ 0/ +/ ++, possibility content setup function
  - Rating: 0/25/50/75/100, i.e. participants are considered as average fractions
- The Main unit and the chairman unit can start sign-in and voting offline. The results will be displayed in the Main unit and in delegate LCDs
- Vote counting takes only 1 sec
- It supports IC card sign-in, delegates degree identification, IC card key, menu language setup etc

RX V2300
Main unit for Video tracing
Code 31161

- The Video tracing main unit is a module of the conference system RX2300. It can implement the automatic video tracking when used with the main unit of the central control system. When a delegate turns on the microphone, the camera will trace speaker location and display it in the video equipment.
- The main unit of the central control system can set up video tracing directly
- 8 cameras can operate simultaneously
- Built in 8x4 channels video matrix, to simplify the video signals management
- Video tracing of the last unit activated
- When one mic is turned off, it will automatically trace the former unit
- When all microphones are turned off, it will go back to panorama
- Public agreement, compatible with all popular cameras
- When unit location changes, the system will automatically correct the video to keep the proper location

CONFERENCE SYSTEM RX 2300

MICROPHONE BASES



RX C2300/00LBI
Chairman unit
Code 29107

RX D2300/00LBI
Delegate unit
Code 29108

- Digital conference system compliant to IEC60914
- Digital audio technique, near-CD sound quality
- Digital audio transfer technique and point to point connection mode. The remote transmission will not influence sound quality. The distance between two units can reach 150m
- 128×64 LCD to display conference messages and equipment status
- "PnP" support
- Built in IC card reader, supporting IC card sign-in delegates degree identification IC card key, menu language setup, etc
- Tabletop design, LCD and keys protection
- Built in high fidelity speaker; speaker angle can be adjusted; when the MIC is turned on or earphones are connected, the speaker is automatically muted
- Double stereo earphone output, volume can be adjusted
- Built in channel selector that can transmit 8/16/64 languages and display CH No
- 4 operating modes
  - Limited mode
  - FIFO mode
  - AUTO mode
  - Voice mode
- Chairman unit has Priority and can switch off or mute the speaking units
- Send/receive message function
- If used with main unit and camera, it features the video tracing function
- System supports 150 chairman units, can specify one unit as the main chairman and carries out the following functions
  - Selecting the operating mode
  - Starting sign-in and voting
  - Receiving or rejecting applications to speech
  - Turning off special MIC
  - Turning off the earliest MIC
  - Turning off all MICS
- In combination with the corresponding software modules, various forms of voting can be implemented:
  - Parliamentary: agree/oppose/ abstain, Pass-rate setup
  - Multi choice/ Opinion poll: 1/ 2/ 3/ 4/ 5,
  - Audience response/ Rating: --/ -/ 0/ +/ ++, content setup function
  - Rating: 0/25/50/75/100, i.e. participants are considered as average fractions

RX C2300

RX D2300

Elenco funzioni unità

Model	Code	Status	Discussion	Video	Simul	Voting	Mess	LCD	IC card reader	Speaker
RX-C2300/00LBI	29107	chairman	•	•		5 keys	•	•	•	•
RX-D2300/00LBI	29108	delegate	•	•		5 keys	•	•	•	•
RX-C2300/08LBI	30545	chairman	•	•	8 ch	5 keys	•	•	•	•
RX-D2300/08LBI	30349	delegate	•	•	8 ch	5 keys	•	•	•	•
RX-C2300/16LBI		chairman	•	•	16 ch	5 keys	•	•	•	•
RX-D2300/16LBI		delegate	•	•	16 ch	5 keys	•	•	•	•
RX-C2300/64LBI		chairman	•	•	64 ch	5 keys	•	•	•	•
RX-D2300/64LBI		delegate	•	•	64 ch	5 keys	•	•	•	•

RX N2800 — IC Card

Code 30144

RX CR2800 — IC Card Writer

Code 30358

- Loads IC card messages via software
- Size 150x118x100mm
- Colour white
- Weight 0.6 Kg

RX M9008

RX M9008
Main unit for Simultaneous Interpretation
Code 30355

- Digital audio code & decode and decompression techniques, near-CD sound quality
- 8CH16CH64CH simultaneous interpretation function. For large audience, it can be used with the infrared language distribution system
- 4 ports, cascade connection; it can connect 80 interpreter units, 160 channel selectors
- It is used with the main unit of Restmoment central control
- Several analogue audio outputs, perfect for recording
- Aluminium alloy, smart and durable, complying with the principles of sustainable engineering
- It ca be used by 2 persons, complying with IEC60914
- Digital audio code & decode compress & decompress technique
- Near-CD sound quality audio output
- Input and output channel control for the quick selection of language channels
- Channels interlock facility, busy channels display function
- RELAY interpretation function
- "Mute" facility to prevent unnecessary voice to be transmitted
- "Speak slowly" facility to alert the current speaker to slow down
- "Request help" function, the interpreter can press the key to ask the operator for help

RX E9008

RX E9008
Double interpreter unit
Code 30354

- Digital audio code & decode and decompression technique, near-CD sound quality
- 4CH,8CH,16CH,64CH simultaneous interpretation function. For large audience it can be used with the infrared language distribution system
- Cascade connection, it can connect with 80 interpreter units, a maximum of 160 channel selectors
- It is used with the central control main unit
- Several analogue audio outputs, perfect for recording
- Aluminium alloy, smart and durable. It can be used by 2 persons, complying with IEC60914
- Input and output channel knob for the quick selection of language channels
- Channels interlock facility, busy channels display function
- RELAY interpretation function
- "Mute" facility to prevent the unnecessary voice to be transmitted
- "Speaking slowly" facility to alert the current speaker to slow down
- "Request help" function, the interpreter can press the key to ask the operator for help. Uni-directional electret condenser MIC with light indicator
- Move pole, easy to transport and maintain
- Double earphone and MIC socket (3.5mm), the volume can be adjusted. When external MICs are connected, the public MIC is automatically turned off to prevent howl
- The menu can be shown in 2 languages: Italian and English
- The LCD shows the operating state in real time

RX E92 — Headphone

Code 30356
Used in the system unit for simultaneous interpretation to listen and speak
High articulation and high fidelity.

RX E004XP

RX E004XP
Infrared Receiver Unit
Code 30352

- Fixed frequency receiver transmission has been replaced by the new rolling code (2MHz-13MHz) digital transmission. The following problems have been completely overcome: crosstalk, high frequency interference from light fittings, noise
- New digital audio technique with multichannel IR DSP built in DSP, and processing speed up to 100MIPS
- One infrared radiator has 64 channels. No crosstalk between these channels
- Innovative digital audio coding/ decoding and decompression technique, to achieve near-CD quality sound
- Many models can be chosen according to the context, it is suitable for all kinds of situation
  - Meeting model
  - Free model
  - Urgent model
- The LED of the Main unit can show channel's operating state, model state, level input state
- The Main unit has 4 digital signal output (BNC); in case of long-distance transmission, the signal will not be attenuated. Each channel can connect 4 radiators. If a digital amplifier is added, the radiation can be expanded without limits
- New digital "keep secret" function.
- Receivers have an LCD which displays channel No volume level, battery state and signal state
- Unit's selection through touch-key to adjust the volume and choose 0-63 channels

RX H004XP

RX H004XP
Infrared Radiator
Code 30351

- In the infrared radiation area, the total number of receivers is not limited. 120 reception angle. Free movement
- Two power supply modes: rechargeable and alkaline batteries. Low current drain, it can work 16 hours in a row
- 15W Infrared radiator with high radiation power, radiation distance up to 50M, radiation angle up to 90°

RX M004XP

RX M004XP
Infrared Main Unit
Code 30353

- Streamline design.
- New rolling code (2m-13m) digital transmission. The following problems have been completely solved: crosstalk, high frequencies interference from light fittings, noise
- Receivers with LCD display channel No volume, signal station and low batteries in infrared signal area. The number of receivers is not limited
- 120° reception angle, it can move freely in infrared signal area
- Free channels are automatically displayed. If all available channels are working no free channel will be displayed in channel selection
- 4 navigation touch Keys to adjust volume and select a maximum of 64 channels
- "Any touch-keystroke" switch: when earphones are connected, the system will be started pressing any key
- It will mute automatically when the signal is too low, to prevent noise
- One box can contain up to 72 receives, to simplify their transport
- When earphones are taken off the system will automatically turn off. If there is no signal, it will automatically turn off
- 2 hanging modes: string and clip. Receivers are equipped with guard function against theft. External guard
- Built in recharge circuit, they receive when recharging. Two power supply modes: rechargeable and alkaline batteries
- 3.5 mm stereo earphone output.
- Colour Grey blue
- Weight 0.1kg

RX E62 — Headphone

Code 29115
Headset to be used with both infrared receivers and with microphone consoles with headset output.
Output impedance 32 Ohm/64Ohm, frequency response 120Hz-15kHz.

FBTAC CS 1CU

CONTROL UNIT

FBTAC CS 1DU FBTAC CS 1CH

MICROPHONE CONSOLES

The innovative design makes the CS series more than just another conference system. With its ECM capsule, intelligent automatic mixing technology and integrated acoustic and mechanical system, the conference system provides turnkey solution with natural, feedback-free audio performance whatever the environment. This conference system is ideal for conferences up to 150 attendees. The system is composed of 1 central unit and up to a maximum of 150 chairman or delegate console.

Control unit
Code 27510

- Controls the chairman and delegate microphones as well as the connections to other audio inputs and outputs
- Self-powered

Delegate microphone base
Code 27512

Provides the facility for the user to take part in the conference via the gooseneck microphone, a PTT ON/OFF switch is provided as is an internal loudspeaker and an external earphone socket

- Flexible condenser microphone
- Diameter without microphone 170x115x90mm
- Microphone length 400mm
- Net weight 1100g

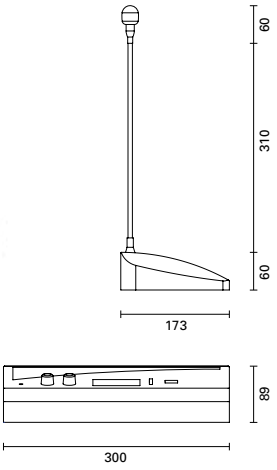
Chairman microphone base
Code 27511

It has the same features of the CS DU model, but with the following difference:

- A priority switch allowing the chairman to control the conference by muting temporarily or completely clearing all active delegate microphone units

CS1-CH

CS1-CU



	CONFERENCE SYSTEM CS SERIES	
Voltage	Vac 100 ~ 264, 50/60Hz	
DC supply to contribution units	±15V ±1V	
	Line, Telephone and Insertion-unbalanced	
Input sensitivity	-14dBV/+11dBV (nominal/maximum)	
Input impedance	33Kohm	
Output level	14dBV/+11dBV (nominal/maximum)	
Output impedance	500ohm	
	Tape Recorder-unbalanced	
Input sensitivity	-20dBV/+5dBV (nominal/maximum)	
Input impedance	47Kohm (for L & R channel)	
Adjustment	-20dBV/+5dbBV	
Output level	+0/-30dB	
Output impedance	500ohm	
	External Microphone input-balanced	
Input sensitivity	-56dBV	
Adjustment	+6dBV/-6dB	
Power supply Phantom	12V±1V, 2*680ohm (±2%)	
	Headphone Output	
Output level	-8dBV/+2dBV	
Allowed Impedance	22ohm	
	Gooseneck Microphone	
Type	Back Electret Condenser	
Frequency Response	50 ÷ 18000Hz	
Polar Pattern	Cardioid	
Max. SPL for 1% THD	125dB	
Gooseneck Length	400mm (15")	
	CS-1CU	**CS-1CH e CS-1DU**
Dimensions (WxHxD)	300x89x150mm	115x60x173mm
Dimensions	-	400mm (15")
Weight	1745gr	1100gr

FBT Audio Contractor

INTERCOM SYSTEMS

Sound Design Project
iGuzzini illuminazione
headquarters, warehouse
Recanati - Macerata

INTERCOM 1300

MICROPHONE INTERCOM SYSTEM

Installed in different rooms the intercom system allows users to speak and listen at each end without having to press any buttons. The kit is composed of three separate modules: control station, power supply, and loudspeaker unit with integral microphone.
The devices function in half-duplex (one-at-a-time) mode and activation thresholds are modified automatically in relation to environmental background noise levels. The operator station can enable one-way operation, i.e. exclusively automatic listening, with speak facility at the press of a button.

Intercom 1300 composed of:
- **SIBK 013** control station,
- **AASL 012** power supply,
- **SICK 012** loudspeaker-microphone enclosure with connection cable

Optional:
- **SICK 013** supplementary loudspeaker for operator station
- headset with microphone for operator station

	INTERCOM 1300
Code	**18083**
Power supply	220 Vac, 50 Hz
Power input	16VA
Power input	1W
External loudspeaker impedance	8ohm
Bases dimensions	220x157x55mm
Flex cable and microphone length	358mm
External loudspeaker dimensions	110x64x54mm (bracket excluded)

FBT Audio Contractor

MICROPHONES
MICROPHONE BASES
WIRELESS MICROPHONES

Sound Design Project
for reception hall and conference centre
(Villa Foscarini-Cornaro - Gorgo al Monticano, TV

- ***Settings:***
  4 reception rooms (approx. 200 m2)
  4 rooms (approx. 25 m2)
  1 outdoor arcade
- ***Requirements:***
  Sound amplification system designed for conferences, banquets and receptions 9 independent zones, 3 of which are main
- ***Preamplifier equipment:***
  3 MMZ8004 mixers featuring 4 output buses
  1 MZU2008 zone selector
- ***Power amplifiers:***
  2 MCA4240A multi-channel power amp.
- ***Loudspeakers:***
  42 STUDIO4/WT loudspeakers, 2-way, 60 W RMS and loudspeakers from the FBTMaxX range
- ***Microphone bases:***
  1 MBT8008 unit for announcements in individual zones and generating automatic alarm messages
- ***Wireless microphones:***
  4 WM-505 wireless microphones

MD-S 1100 | MD-S 1300

HAND-HELD MICROPHONES

Dynamic microphones cardioid
- ON-OFF switch
- Male XLR connector
- Anthracite grey body
- Black mesh and antipop filter
- High performance
- High-quality voice reproduction
- Low distortion
- High resistance to knocks
- Special cartridge suspension mount to isolate the microphone from handling noise
- **Ideally suited for speech applications**

Dynamic microphones percardioid
- ON-OFF switch
- Male XLR connector
- Anthracite grey body
- Black mesh and antipop filter
- High performance
- High-quality voice reproduction
- Low distortion
- High resistance to knocks
- Special cartridge suspension mount to isolate the microphone from handling noise
- **Ideally suited for singing applications**

	MD-S 1100	MD-S 1300
Code	**10040**	**10042**
Characteristics	Dynamic	Dynamic
Directivity	Cardioid	Hiper-Cardioid
Frequency Response	80Hz÷13 kHz	50Hz÷18 kHz
Sensitivity (OdB-1V/micro bar,1000 Hz)	-75dB±3dB	-72dB±3dB
Output impedance	500ohm	250ohm
Material	Zamak	Zamak
Weight	220 g	359 g
Dimensions	ø 54x175mm	ø 54x187mm
Accessories included	Stand SU30	Stand SU30
Microphone cables (optional)	**CI-M 5 X**	**CI-M 5 X**
	CI-M 5 D	**CI-M 5 D**
	CI-M 5 J	**CI-M 5 J**

MD-F 5044 | MC-F 5042

GOOSENECK MICROPHONES

Dynamic microphones cardioid with gooseneck
- Male XLR connector
- Low reflectivity black finish
- Outstanding directional characteristics
- Ideal for:
  - hotels
  - shopping centres
  - churches
  - conferences
  - offices

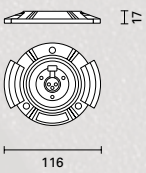
Electret microphone with gooseneck
- Male XLR connector
- Low reflectivity black finish
- Outstanding directional characteristics
- Ideal for:
  - auditoriums
  - shopping centres
  - conference halls

	MD-F 5044	MC-F 5042
Code	**10045**	**10044**
Characteristics	Dynamic	Electrete
Directivity	Cardioid	Cardioid
Frequency Response	80Hz÷16 kHz	80Hz÷16 kHz
Sensitivity (OdB-1V/micro bar,1000 Hz)	-68dB±3dB	-68dB±3dB
Output impedance	500ohm	250ohm
Power supply	-	Phantom 9:52 Vdc
Weight	215 g	135 g
Dimensions	ø 29x438mm	ø 19x424mm
Accessories included	Stand SU30	Stand SU30
Optional accessories	**BF-T 6300**	**BF-T 6300**
	SF-I 6306	**SF-I 6306**

Dynamic microphones cardioid with gooseneck
- Push-to lock switch
- Male XLR connector
- Low reflectivity black finish
- Outstanding directional characteristics
- Ideal for:
  - hotels
  - shopping centres
  - churches
  - offices

Dynamic microphones cardioid with gooseneck
- Same characteristics as the MD-F 5045 S with push-to-talk switch
- Code: 15294

Flush-mounted base for gooseneck microphones
- Flush-mounted anti-shock base
- XLR connector for the direct connection of gooseneck microphones
- Welded wiring terminals to amplification systems
- Black ABS body
- Compact design for minimum visual impact



	MD-F 5045 S	MD-F 5045 SI	SF-I 6306
Code	**10046**	**15294**	**10050**
Characteristics	Dynamic microphone with push-to lock switch	Dynamic microphone with push-to-talk switch	Flush-mounted antishock base
Material	-	-	High-density ABS
Directivity	Cardioid	Cardioid	
Frequency Response	100Hz÷12 kHz	100Hz÷12 kHz	
Sensitivity	-77±3dB (0dB-1V/micro bar, 1000 Hz)	-77±3dB (0dB-1V/micro bar, 1000 Hz)	
Output impedance	500ohm	500ohm	
Weight	315 g	315 g	130 g
Dimensions	ø 29x440mm	ø 29x440mm	ø 116x17mm
Optional accessories	**SF-I 6306**	**SF-I 6306**	
Microphones with gooseneck application facility	**-**	**-**	**MD-F 5044** **MC-F 5042** **MD-F 5045 S** **MD-F 5045 SI**

MS 30 BK
Floor stand

Code 18245
Adjustable floor stand

ASG 230
Boom arm

Code 11864
Boom arm for MS 30 BK microphone stand

TB 30 BK
Table microphone stand

Code 18248
Adjustable table microphone stand

SU 30
Universal clamp-on

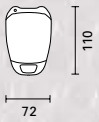
Code 11586
Universal hand-help microphone clamp-on

CM 601

CONDENSER MICROPHONE

Low profile panoramic microphone, electret condenser

- On/off switch,
- The switch can be programmed for the push on/off, push/ to talk, push/to mute functions
- LED indicator
- Three-position low cut switch, minimizing mechanical noise
- 3 pin Mini XLR-M output connector
- 36-52 VDC Phantom Power, 88 g net weight
- Specially suitable for conference tables, altars and stage floors



	CM 601
Code	**27516**
Characteristics	Electrete Condenser
Directivity	Half-Cardioid
Frequency Response	30Hz÷12.000 Hz
Sensitivity (OdB-1V/micro bar,1000 Hz)	-53dB±3dB
Low Frequency Roll-off	80Hz, 120Hz
Output impedance	100ohm
Max SPL	125dB at 1kHz
Signal to noise ratio	67dB
Power supply	Phantom 36÷52 Vdc
Power consumption	≤6mA
Switches	Push control: on/off Function selection: push on/off, momentary on, momentary off Low cut: low frequency roll-off
Output connector	3P Mini XRL-M type
Weight	88 g
Dimensions	72x110mm

FBTAC GM 5206 L - 5212 L - 5218 L

CONDENSER MICROPHONE

Condenser microphone

- XLR connector

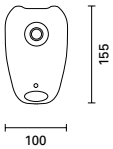
	FBTAC GM 5206L	FBTAC GM 5212L	FBTAC GM 5218L
Code	**27515**	**27514**	**27513**
Characteristics	Electrete Condenser		
Directivity	Super Cardioid		
Frequency Resp.	80Hz÷18.000 Hz		
Sensitivity	(1000 Hz) -60dB (1mV)		
Output impedance	220ohm		
Max SPL	125dB		
oer 1% THD			
Phantom Power	36-52Vdc		
Output connector	XLR		
Dimensions	FBTAC GM5206L 152mm (6") FBTAC GM5212L 305mm (12") FBTAC GM5218L 457mm (18")		

FBTAC ST 5050

MICROPHONE BASES

Universal microphone base

- Both phantom power and 9V battery power supply
- On/off switch with possible push/ to talk, push/to mute



	FBTAC ST 5050
Code	**27499**
Frequency response	20Hz÷20.000 Hz
Stand-By power consumption	1mA
Operating power consumption	2.07mA (BAL), 1.34mA (UNBAL)
Switches	Microphone selection: ECM MIC unbalanced input, ECM MIC balanced input, Dynamic MIC input
Connectors	Unbalanced and balanced audio input (XRL 3P Female) Unbalanced and balaced audio output (XRL 3P Male)
Weight	0,82 Kg
Dimensions	100x155mm

FBTAC ST 850

MICROPHONE BASES

Microphone base

It is automatically set to be wired or wireless, adding the transmitter and receiver

- On/off switch
- The base operates with power transmitters and it is compatible with FBTAC-PT-850B transmitters
- Where wireless transmitters not available, it will be enough to connect ST850 to a microphone cable with Phantom power supply: it will function as a standard flexible microphone

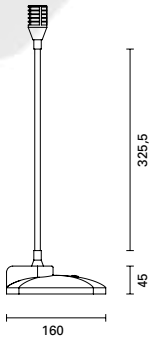
	FBTAC ST 850
Code	**27500**
Features	Back Electret Condenser
Frequency response	50Hz÷18.000 Hz
Directivity	Supercadioid
Output level (at 1,000 Hz)	Wireless -66±3dB (1.58mV) 0dB=1V/bar Wired -56±3dB (1.58mV) 0dB=1V/µ bar
Impedance	Wireless 2kΩ Wired 100Ω
Max SPL for 1% THD	125dB
Power supply	Wireless 5VDC Wired 12-48 VDC phantom power
Power consumption	Wireless ≤0.5mA Wired ≤05.5mA
Output connector	Wireless 4P <mini XRL Wired 3P XRL (M)
Switches	Push control on/of
Cable lenght	305mm
Weight	1 kg
Dimensions (WxHxD)	100x65x150mm

MB-T 6400 S

DESK MICROPHONE BASE

Desk base with ON/OFF switch, flexible gooseneck with cardioid dynamic microphone

- 5 metre cable with male XLR connector and 2 conductors for priority activation (ding-dong)



	MB-T 6400 S
Code	**28840**
Features	Dynamic
Directivity	Cardioid
Frequency response	100Hz÷12 kHz
Sensitivity (OdB-1V/micro bar,1000 Hz)	-75dB±3dB
Output impedance	500ohm
Material	Zamak
Weight	1750 g
Dimensions (WxHxD)	160x98x45mm

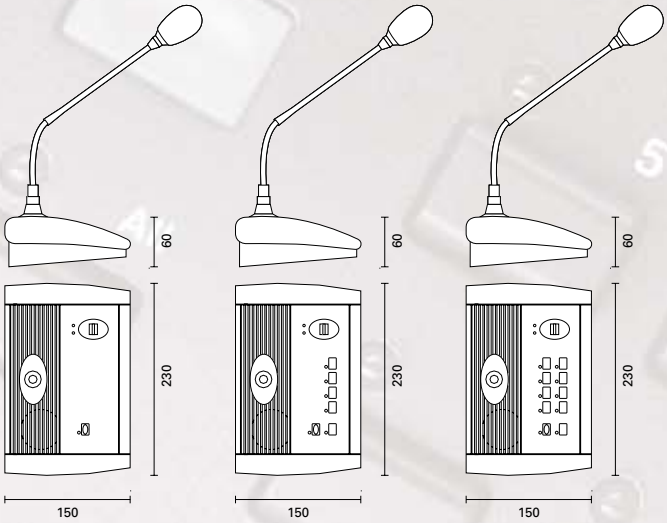
BF-T 5043 L

MICROPHONE BASES WITH GOOSENECK AND SWITCH

Desktop base with ON-OFF switch, gooseneck and cardioid electret condenser microphone

- Complete with a 5-metre cable fitted with a male XLR connector and 2 wires for the activation of the chime priority
- Die-cast zinc base
- Lamp ring
- Touch-switch
- Ideal for all applications, especially for
  - churches
  - conference halls

	BF-T 5043 L
Code	**18322**
Features	Electrete
Directivity	Cardioid
Frequency response	70Hz÷18 kHz
Sensitivity (OdB-1V/micro bar,1000 Hz)	-59dB±3dB
Output impedance	250ohm
Power supply	Phantom 12÷48 Vdc
Material	Zamak
Weight	786 g
Dimensions (WxHxD)	145x100x36mm



The microphone bases in the MB-T 8000 series feature a plastic body with a metal base. These products stand out for their high sensitivity and wide frequency response and the microphones feature a cardioid polar curve. The bases are equipped with a functional 3-position switch, ON push-to-lock, OFF and push-to talk ON as well as an emergency button.

- Pre-amplified (output 0dBu)
- Dynamics compressor to ensure optimal level of clarity
- Internal message generator to indicate the start and end of microphone messages and for an emergency signal.
- Option to control priority (music off)
- Management of 4 or 8 zones independently, depending on the model, and general calls
- For the management of a larger number of zones, upon request

AL 8000 Power Supply

Code 17074
Power Supply +15/-15V for pre amplified microphone bases of MB-T8000 series

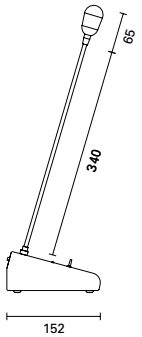
STH 022 Multipair Shielded cable

Model	Code	Dimensions
STH 02-022	**13360**	2x2x0,22
STH 05-022	**13103**	5x2x0,22
STH 09-022	**13104**	9x2x0,22

	MB-T 8001	MB-T 8004	MB-T 8008
Code	**19543**	**11828**	**12122**
Features	Base with switch, emergency button	Base with switch, 4-zone selection, emergency button	Base with switch, 8-zone selection, emergency button
Microphone	Electret	Electret	Electret
Polar curve	Cardioid	Cardioid	Cardioid
Frequency response	70Hz ÷ 18KHz	70Hz ÷ 18KHz	70Hz ÷ 18KHz
Sensitivity	-63dB± 3dB	-63dB± 3dB	-63dB± 3dB
Output impedance	600ohm	600ohm	600ohm
Gooseneck	L=370mm ø 9mm	L=370mm ø 9mm	L=370mm ø 9mm
Warning/emergency signals	CHIME:2Tones CHIME:4Tones Emergency	CHIME:2Tones CHIME:4Tones Emergency	CHIME:2Tones CHIME:4Tones Emergency
Output voltage	0dBu (0,775Vrms) balanced	0dBu (0,775Vrms) balanced	0dBu (0,775Vrms balanced)
Power supply	±15Vdc/80mA	±15Vdc/80mA	±15Vdc/100mA
Material	Plastic with steel base	Plastic with steel base	Plastic with steel base
Accessories included	Antipop filter	Antipop filter	Antipop filter
Optional accessories	Multipair Shielded cable 5x2x0.22 **STH05-022**	Multipair Shielded cable 5x2x0.22 **STH05-022**	Multipair Shielded cable 9x2x0.22 **STH09-022**

MB-T 8024

DESKTOP BASES



Preamplified desk console with electret microphone and compressor
3-position power button, 24-zone + all selection, emergency button, generation of digital signals for message begin/end and programmable emergency signals. LED indicating: open microphone, warning and emergency signals, selected zones
- 424mm flexible arm
- Console dimension 150x230x70mm
- Required Phantom power supply ±15Vdc

	MB-T8024
Code	**21386**
Features	Base with switch, 24-zone selection, emergency button
Microphone	Electret
Polar curve	Cardioid
Frequency response	70Hz ÷ 18KHz
Sensitivity	-63dB± 3dB
Output impedance	600ohm
Gooseneck	L=370mm ø 9mm
Warning/emergency Signal	CHIME:2Tones CHIME:4Tones Emergency
Output voltage	0dBu (0,775Vrms) balanced
Power supply	±15Vdc/80mA
Material	ABS with steel bottom
Accessories included	Antipop filter
Optional accessories	Multipair Shielded cable 18x2x0,22

AL 8000 — Power Supply

Code 17074
Power Supply +15/-15V for pre amplified microphone bases of MB-T8000 series

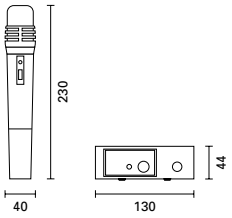
MBT 6000 — MBT 8006

DESKTOP BASES

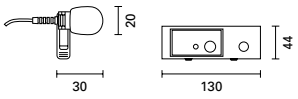
Microphone console designed for the MMZ 6000/6020 matrixes, that can be connected to RS-485 interface
Code 31083
- 1 stereo input with auxiliary Cinch RCA and the relevant volume
- 4 switches per sector; 4 different "Ding-Dong" pre-call chimes
- 1 main volume for the output signal
- 7 buttons (not maintained) for closing selected + all zones and status LEDs
- 1 three-position switch for microphone turning on (momentarily ON, permanent ON/OFF)

Desk console with cardioid dynamic microphone
- 1 three-position switch for microphone turning on (momentarily ON, permanent ON/OFF)
- multiconductor cable (5 m) for the connection to the mixer with plug-in connectors
- 7 buttons (maintained) for closing selected + all zones and status LEDs

	MB-T 8006
Code	**30384**
Features	Dynamic
Directivity	Cardioid
Frequency response	100Hz ÷ 12KHz
Sensitivity	-75dB±3dB
Output impedance	500ohm
Material	ABS with steel bottom
Accessories included	Antipop filter
Optional accessories	5mt multipolar cable for connection with amplifier **MMA6120 TCD/MP3** and **MMA6240 TCD/MP3**



Design philosophy and technology aimed at guaranteeing optimal quality and reliability with high level performance. Receiver with SWITCHING DIVERSITY technology, to ensure signal selection at all times at the radio frequency with the best intensity, thereby ensuring top quality and reproduction stability in sound amplification systems.



LM - 10 Lavalier microphones

Code 13544
Lavalier microphones have electrical and mechanical characteristics to guarantee reproduction of clear and intelligible speech for the entire system. The compact dimensions and weight ensure use in all cases where the utmost freedom of movement is indispensable.

HM - 26 Headset microphones

Code 13543
Headset microphones have electrical and mechanical characteristics to guarantee reproduction of clear and intelligible speech for the entire system. The compact dimensions and weight ensure use in all cases where the utmost freedom of movement is indispensable.

AVL 606 Microphone

Code 14142
As well as the characteristics of the other two models, this microphone features special sweatproof protection to enable use in all applications subject to high levels of humidity or perspiration. (Typical applications include gymnasiums, swimming pools, camp sites etc.).

	WM 505/...	WM 705 A/L
Code	**11573** 175 Mhz **11574** 214 Mhz **14922** 204 Mhz **14923** 212 Mhz **14924** 203 Mhz	**14827** 181 Mhz **14828** 203 Mhz
Transmitter type	Hand-held	Lavalier and Headset
Audio band	50 Hz-15 Khz	50 Hz-15 Khz
Microphone type	Dynamic	Electrect
Directivity	Cardioid	Cardioid
Power RF	10mW	5mW
Power supply	1,5V (AA, E91, LR6, AM3 Alkaline)	3V (2 x AAA, Alkaline)
Absorption	60mA	25mA
Duration	Tipico 12 ore	Tipico 12 ore
Weight	210 g	100 g
Operation	SW Diversity Quartz-controlled	SW Quartz-controlled
Antenna	2	2
Power supply	12/18V external	12 V dc/300 m A with power supplier
Squelch	Adjustable	Adjustable
Audio Output	0:300mV	12V dc/300 m A 0:300mV
Weight	0,9 Kg	0,9 Kg

UHF PLL true diversity receiver
- Banda di frequenza: 494MHz-870 Frequency band: 494MHz-870 MHz
- Suitable for 1 transmitter (FBTAC Mh 750, FBTAC Mh 920, FBTAC PT 850 B)
- Preset with 16 selectable UHF channels (782MHz-806MHz)
- Diversity technology preventing from signal losses in RF links
- Noise Mute e and pilot tone squelch circuit to avoid interferences
- Balanced and unbalanced XLR outputs
- 1/2 U rack metal chassis

Microphone with UHF PLL transmitter
Code 27494
- 16 selectable channels
- Frequency band: 782MHz - 806MHz
- Advanced circuits guaranteeing stable transmission signals
- Squelch tone-key
- Wide dynamic range and flat frequency response
- Internal antenna, lightweight hard plastic case

UHF PLL true diversity receiver
- Frequency band: 494MHz-870MHz
- Preset with 16 selectable UHF channels (782MHz-806MHz)
- Suitable for 2 transmitters (FBTAC Mh 750, FBTAC Mh 920, FBTAC PT 850 B)
- Diversity technology preventing from signal losses in RF links
- Noise Mute e and pilot tone squelch circuit to avoid interferences
- LCD Display
- Balanced and unbalanced outputs
- 1 U rack metal chassis

Microphone with UHF PLL transmitter
Code 27496
- 16 selectable channels
- Frequency band: 782MHz - 806MHz
- Advanced circuits guaranteeing stable transmission signals
- Wide dynamic range and flat frequency response
- Advanced circuits and squelch key avoiding interferences
- Internal antenna
- Suitable for condenser or dynamic cartridge
- LOCK-ON function to avoid accidental interruptions

FBTAC Mh 750

FBTAC US 8001D

FBTAC Mh 902

FBTAC US 902D

FBTAC PT 850B — Body pack transmitter

Code 27495
- 16 selectable channels
- Frequency band: 782MHz -806MHz
- AA battery supply
- Featuring 4P mini XLR connector
- Hard and solid plastic case
- Compatible with lavalier and boom microphones
- LED display, designed for waist carrying

FBTAC CM 501 — Lavalier microphone

Cod. 27497
Lavalier unidirectional cardioid condenser microphone 4P mini XLR connection, frequency response 100-15,000Hz; Sensitivity (at 1,000Hz): -60±3 dB* (1mV)*0dB=1V/µbar, 1kz; Impedance 2.2Kohm; wide dynamic range and excellent frequency response; small size for low visibility; including the clip for easy hanging on ties, suits, lapels. Net weight: 21.5 gr.

FBTAC CX 504 — Cardioid microphone

Code 27498
Cardioid condenser boom microphone; perfect for voice. 4P mini XLR connection, frequency response 30-18,000Hz; Sensitivity (at 1,000Hz): -68±3 dB* (0.4mV)*0dB=1V/µbar, 1kz; impedance 680Kohm; excellent pre-feedback gain and noise insulation; light weight enabling free movement; ergonomic design guaranteeing wearing comfort; Net weight: 56.3 gr.

	FBTAC US 8001 D	FBTAC US 902 D
Code	**27493**	**27492**
RF FREQUENCY Range	600MHz-960MHz	600MHz-960MHz
Oscillation Type	PLL	PLL
Channel	16	16
Frequency response	50Hz-18kHz	50Hz-18kHz
Bandwidth	24MHz	24MHz
Operating range	100 M	100 M
Receiver mode	Diversity	Diversity
Signal/Noise Ratio	>100dB	>100dB
Sensitivity RF	-107dBm (12dB S/N AD)	-107dBm (12dB S/N AD)
Display	LED	LCD
Controls	On/Off, volume, channel Up/Down	On/Off, volume, channel Up/Down , Squelch level
Audio Output Level	-12dB	-12dB
AF Output Impedance	600ohm unbalanced	2,2Kohm unbalanced
Squelch	pilot tone and Noise Mute	pilot tone and Noise Mute
Operating voltage	12-18VDC, 600mA	12-18VDC, 600mA
Outputs	1 balanced XLR and 1 unbalanced Jack 6,3mm	2 balanced XLR and 1 unbalanced Jack 6,3mm
Dimensions (WxHxD)	221x40x152mm	480x45x232mm

	FBTAC Mh 750	FBTAC Mh 920
Code	**27494**	**27496**
Frequency Deviation	+/-48KHz	+/-48KHz
S/N	>100dB (1kHz - A)	>100dB (1kHz - A)
Current consumption	100mA	100mA
LCD / LED indicators Power	On/Off Power Battery Level	On/Off Power Battery Level
Batteries	2xAA 1,5V	2xAA 1,5V

FBT Audio Contractor

PREAMPLIFIER EQUIPMENT

CONTROL UNITS AND MIXERS

POWER AMPLIFIERS

RACKS

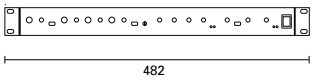
MUSIC SOURCES

AMPLIFICATION EQUIPMENT

Sound Design Project for World Trade Center (Zaragoza)

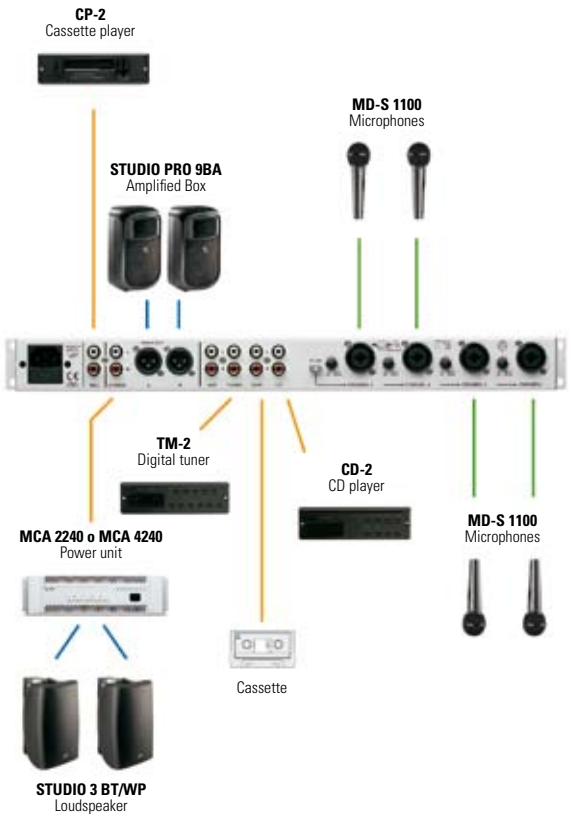
M 12X4

PREAMPLIFIER MIXER



Preamplifier/mixer with 12 inputs and 4 outputs

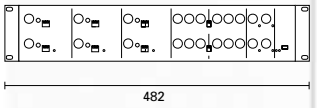
- 4 micro/line inputs;
- Priority of the 4 microphone inputs over all other inputs and priority of the first input over the other 3
- Volume control and voice control for the 4 microphone inputs
- Phantom 24V. 4 stereo line inputs on double RCA with selection via purpose-provided selector knob
- General volume and tone control
- 2 XLR outputs for
- Left and right channel with independent volume control for each channel
- One stereo output and one stereo recording output
- 1 rack unit



	M 12X4	
Code	**18147**	
Mono Channels micro	Impedance kohm	2,2
	Max input signal dBu	0
	Max gain (@ main Out)dB	65
	Equivalent input noise (EIN) (between 22Hz and 22KHz unweighted)	- 118
	CMRR (@main out, Gain 75dB)dB	- 65
Mono Channels line	Impedance kohm	33
	Max input signal dBu	30
	Max gain (@main Out) dB	25
Mono Channels tone	Voice dB	± 12
Stereo Channels tone	Impedance kohm	22
	Max input signal dBu	10
	Max gain (@ main Out) dB	10
Stereo Channels tone	High Shelving (@12kHz) dB	± 15
	Low Shelving (@80kHz) dB	± 15
General outputs	Impedance kohm	600
	Max output (main out) dBu	22
	Distortion + noise@16dBu (main out, 40dB gain)	0,025%
	Signal/noise ratio 20dB	96
	Frequency response (@0/1dB)	20Hz-20kHz
Power supply	100V÷230V - 50Hz÷60Hz with internal power supply unit	

MMZ 8004 S

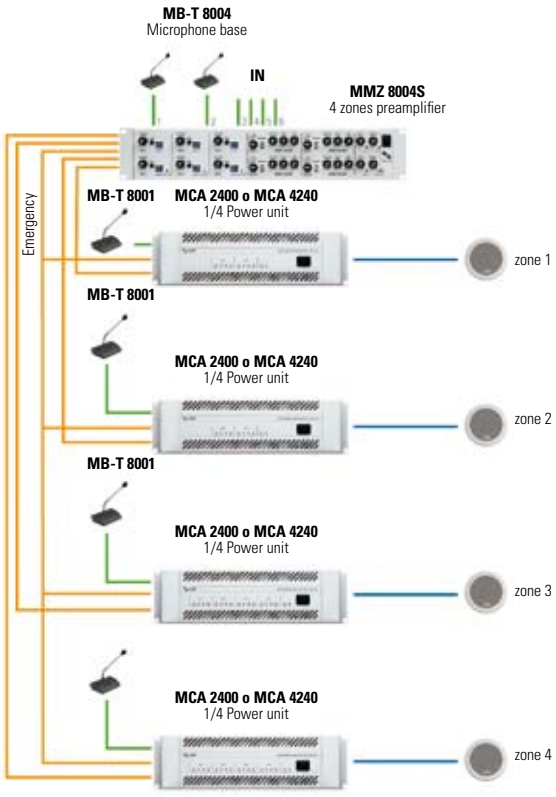
4-ZONE PREAMPLIFIER



Preamplifier/mixer with 10 inputs and 4 outputs

- 6 Combo inputs
- 4 stereo line inputs for CD, Tape, Tuner and Aux, selected on each output zone
- 4 output buses with independent control
- Microswitch on each input for routing to each output
- Adjustable sensitivity of micro and line inputs
- Designed for connection to up to 2 amplified microphone bases from the MBT8000 series equipped with zone selector switches
- Designed for connection to emergency detection systems for guided evacuation, with priority over all inputs
- Automixer operating mode on 3 microphone channels, thanks to the GATING function (this function allows for the level of speech to be increased before the "Larsen effect" - feedback whistling - occurs)
- Internal switching power supply from 100V to 230V and from 50Hz to 60Hz
- 2 rack units

4 ZONE PAGING - LOCAL PRIORITY



	MMZ 8004 S
Code	**19812**
Features	Dimensions 2 racks with frame with RAL 7035 grey paint finish
Microphone-Max gain line	6 micro/line inputs with Combo connector (XLR and JACK) 75dB/2kohm
Input 1 and 2	Terminal board with option to select output 1,2,3 and 4 from a remote microphone
Max. gain line/Imp.	4 stereo inputs pin jack RCA 40dB/33kohm
Frequency response@0/-1dB	20Hz÷80KHz
S/N ratio@20db of gain	110dB
Level control	8 Volume controls, 6 GAIN controls, 2 Master
High pass filter	Channels1:6 micro/line@80Hz-12dB/oct.
Voice control	6 adjustment trimmers for voice presence on mic. inputs
Tone control	2 separate bass and treble tone controls on music inputs only
Phantom Power supply	48 VDC activated on micro inputs only
Output 1, 2, 3 and 4	Selectors enable routing of each input to output 1,2,3, 4
Inputs Music	4 stereo inputs on double RCA for CD, Tape, Tuner and Aux selected on each output zone
Outputs dB/Impedance	28 dBu/600 ohm balanced
Auxiliary outputs	Direct outputs channels 1-6 + recording socket output 1,2,3 and 4 0 dBu/600 ohm
Priority on music	Direct outputs channels 1-6 + recording socket output 1,2,3 and 4 0 dBu/600 ohm
Remote controls	Optional cards for: remote volume for outputs 1,2,3 and 4 - Automatic level control according to background noise on output 1
Emergency control	Input with photo coupler, Open Collector output
Insert bus 1 and 2	6.3mm stereo jack socket to connect auxiliary equipment
Luminous indicators	Led indicating saturation level (peak) on outputs 1,2,3, and 4 - phantom on (48 VDC micro)
Power supply VAC	230 VAC or 120 VAC with internal power supply unit
Optional accessories	**MMZ-AR** card for automatic level control according to background noise (output 1 only) **MMZ-VRC** card for remote volume control for pair of outputs 1/2

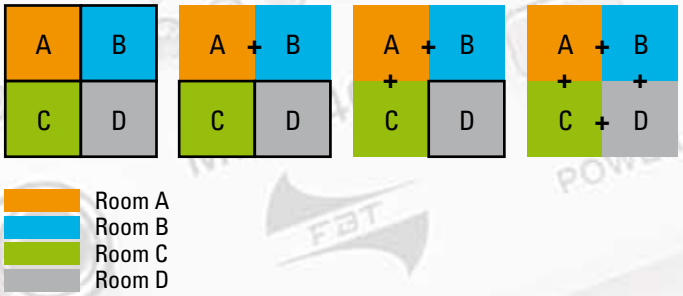
MMS 4004

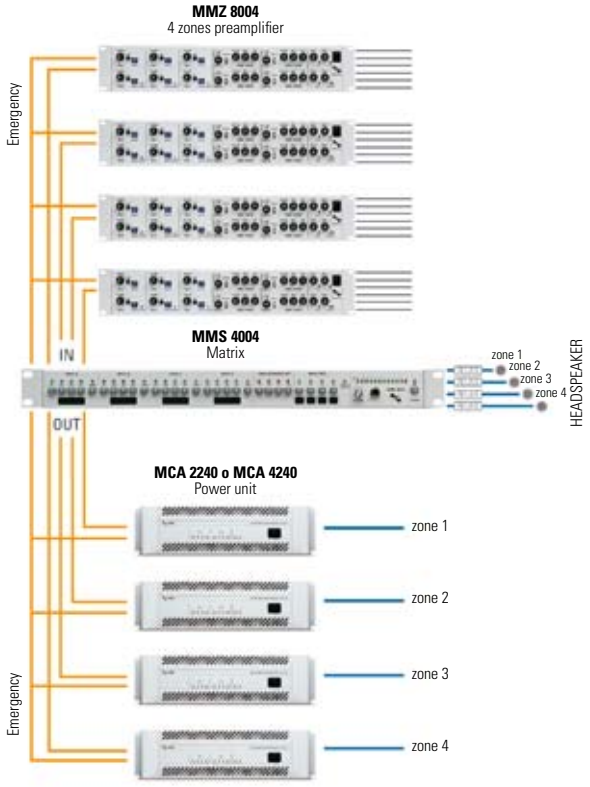
MATRIX MIXER

Control unit for 4 inputs into 4 outputs

- Provides fast and simple zone configuration, eliminating the need for complicated relay wiring
- Constant monitoring of inputs and outputs on VU meter and headphones
- 1 rack unit

Setting combinations
MMS 4004 matrix mixer





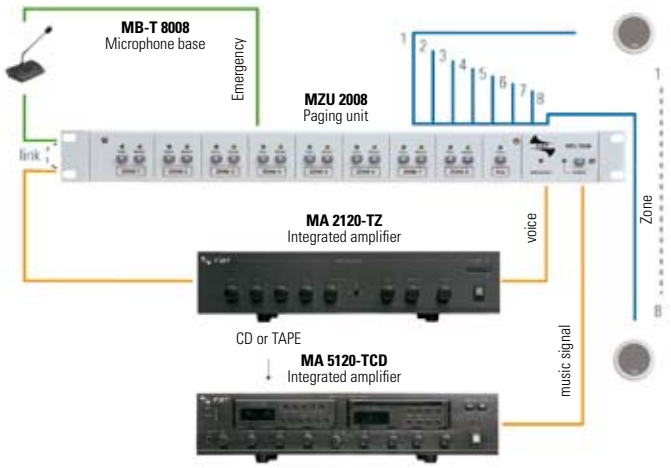
	MMS 4004
Code	**11826**
Characteristics	Matrix of one rack unit with 1 frame with RAL 7035 grey finish
Inputs	4 balanced
Outputs	4 balanced
Max. Signal for input/Z	22 dBu balanced/10 kOhm
Max. Output signal/Z	28 dBu balanced/600 Ohm
Monitor output	6.3mm stereo jack socket for terminal board shield for loudspeaker on rear panel
Emergency	Terminal board for emergency circuit activation
Controls	Routing of each input to each output of the 4 zones. Pre-listening for each Monitor input on the 4 zones
Power supply	230 VAC with external power supply unit 120 VAC with external power supply unit
Luminous indicators	Selected output indicator Monitor-Emergency-Monitor out for each VU output meter-Power ON-OFF
Insert	6.3mm stereo jack socket on each output

MZU 2008

ZONE PAGING UNIT

The MZU 2008 switching unit can be installed in 19" racks for selective voice/music switching in 8 audio zones, with the possibility to increase the number of zones as multiple of 8, adding other MZU 2008 in cascade.
Selection of the zones in which the music is to be interrupted and an announcement transmitted is carried out from the MBT 8008 control console.
Using the 8 "MUSIC" keys on the front panel, you can choose in which of the 8 audio zones to play the normal background music and in which zones no music is to be played. The system can be configured in one of the following ways:

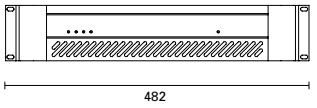
- a) the 2 inputs of the unit are driven by two amplifiers, one of which is dedicated to voice transmission and the other to music transmission.
  The 8 outputs of the unit drive the 8 speakers of the 8 audio zones.
- b) the 2 inputs of the unit are driven by two signal preamplifiers, one of which is dedicated to voice transmission and the other to music transmission.
  The 8 outputs of the unit drive the 8 power amplifiers dedicated to sound diffusion in the 8 audio zones.



	MZU 2008
Code	**12944**
Characteristics	1 rack unit with frame with RAL 7035 light grey paint finish
Inputs	2 music inputs with two wires, speech with three wires, one of which is used for Emergencies (for amplifiers)
Outputs for loudsp. line (zones)	8 with three wires, one of which is used for Emergencies
Max. applicable power	1200 Watt/100 V, 840 Watt/70V, 600 Watt/50V, 300 Watt/25V
Controls	Speech key for each zone. Music key for each zone. General call key. Power ON-OFF key
Remote controls	Zone selection control. General call command. Activation of emergency and OPEN COLLECTOR output
Output power supply	Power supply +15/0/-15 VDC
Luminous indicators	Speech Led and Music Led per zone. General call indicator led. Emergency indicator led. Power ON-OFF indicator led
VAC Power supply	230 VAC with external power supply unit 120 VAC with external power supply unit
Optional accessories	MBT 8008 microphone base

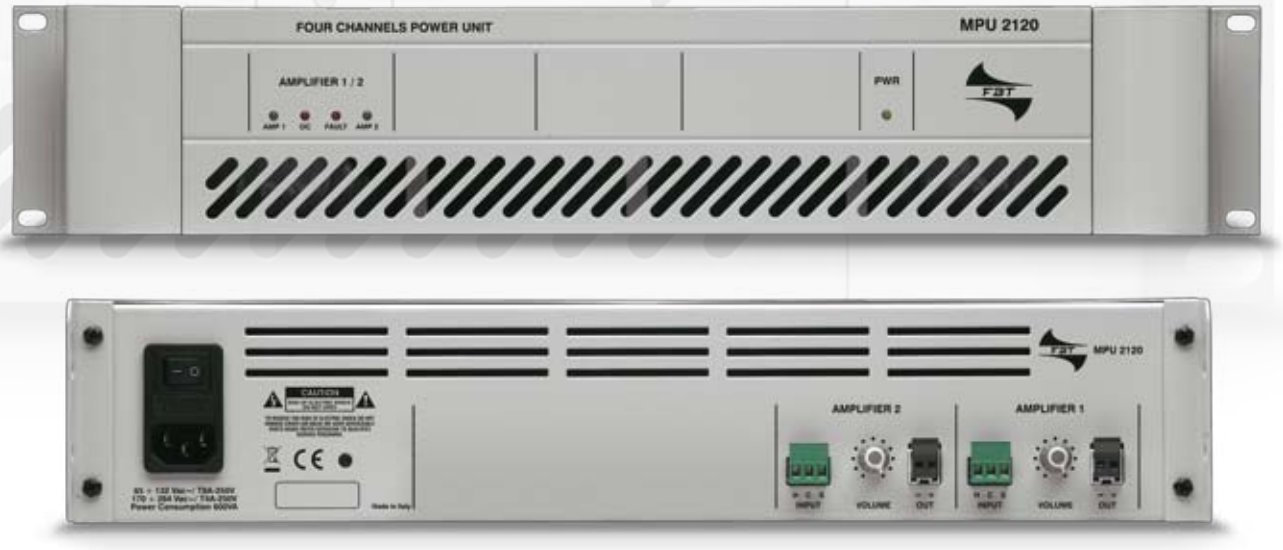
MPU 2120 MPU 4060

MULTI CHANNEL 100V LINE POWER AMPLIFIERS

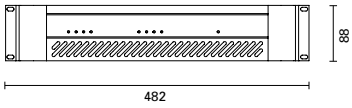


Monoblock unit
60W to 480W
- Output with transformers for 100V and 70V lines
- Frequency response 40Hz to 20kHz
- 40Hz internal high-pass filter
- Configurations: 2x120W, 1x240W
- Thermal and short-circuit protections
- 2 U rack

Monoblock unit
60W to 480W
Same features as the MPU 2120 model except for the following difference:
- Configurations: 4x60W, 2x120W

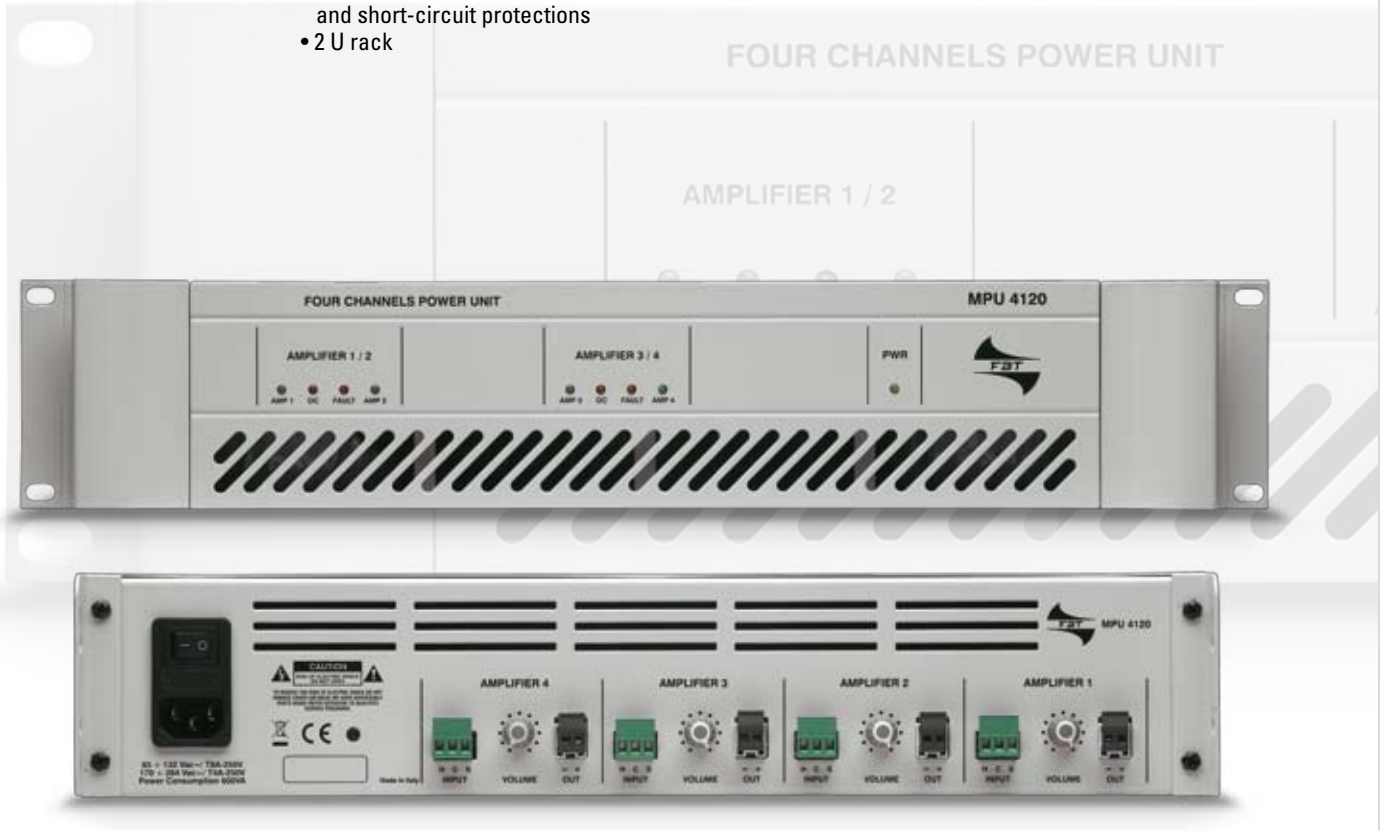


	MPU 2120	MPU 4060
Code	**31080**	**31079**
Features	2-channel monoblock amplifier	4-channel monoblock amplifier
Output power of all the driven channels	2x120Wrms 100V/70V 1x240Wrms 100V	4x60Wrms 100V/70V 2x120Wrms 100V
Frequency response	40Hz÷20kHz	40Hz÷18kHz
(@1 W, -3dB 100V output)	40Hz internal high-pass filter	40Hz internal high-pass filter
Signal/noise ratio	96dB (with filter 22Hz÷22kHz)	96dB (with filter 22Hz÷22kHz)
Separation between chan. THD+D@1W/8ohm	> 80dB	> 80dB
THD+D@1W/8ohm	0,005%	0,004%
Inputs	balanced with screw connector	balanced with screw connector
Input sensitivity	0dBu (0.775V) balanced 6dBu (1.5V) unbalanced	0dBu (0.775V) balanced 6dBu (1.5V) unbalanced
Input impedance	20kohm balanced 10kohm unbalanced	20kohm balanced 10kohm unbalanced
Controls	Volume control for each channel located in the back panel	Volume control for each channel located in the back panel
Light indicators	Input signal presence for each OC (over current) channel and Fault every two channels	Input signal presence for each OC (over current) channel and Fault every two channels
Power supply Vac	Internal setting 85÷132Vac 170÷264Vac (default)	Internal setting 85÷132Vac 170÷264Vac (default)
Absorption	300VA (@ max power with music signal)	250VA (@ max power with music signal)
Operating conditions	-20°C+40°C with max. humidity <90%	-20°C+40°C with max. humidity <90%
Protections	Short-circuit (OC), thermal (Fault)	Short-circuit (OC), thermal (Fault)
Cooling	1 ø 60mm fan	1 ø 60mm fan
Dimensions (WxHxD)	482x88x430mm (2 U rack)	482x88x430mm (2 U rack)



Monoblock unit
60W to 480W
- Output with transformers for 100V and 70V lines
- Frequency response 40Hz to 20kHz
- 40Hz internal high-pass filter
- Configurations: 4x120W, 2x240W
- Thermal and short-circuit protections
- 2 U rack

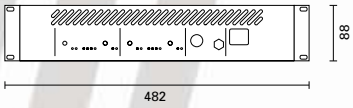
Monoblock unit
60W to 480W
Same features as the MPU 2120 model except for the following difference:
- Configurations: 4x240W, 2x480W



	MPU 4120	MPU 4240
Code	**31059**	**31078**
Features	4-channel monoblock amplifier	4-channel monoblock amplifier
Output power of all the driven channels	4x120Wrms 100V/70V 2x240Wrms 100V	4x240Wrms 100V/70V 2x480Wrms 100V
Frequency response	40Hz÷20kHz	40Hz÷18kHz
(@1 W, -3dB uscita 100V)	40Hz internal high-pass filter	40Hz internal high-pass filter
Signal/noise ratio	96dB (with filter 22Hz÷22kHz)	96dB (with filter 22Hz÷22kHz)
Separation between channels	> 80dB	> 80dB
THD+D@1W/8ohm	0,005%	0,005%
Inputs	balanced with screw connector	balanced with screw connector
Input sensitivity	0dBu (0.775V) balanced 6dBu (1.5V) unbalanced	0dBu (0.775V) balanced 6dBu (1.5V) unbalanced
Input impedance	20kohm balanced 10kohm unbalanced	20kohm balanced 10kohm unbalanced
Controls	Volume control for each channel located in the back panel	Volume control for each channel located in the back panel
Light indicators	Input signal presence for each OC (over current) channel and Fault every two channels	Input signal presence for each OC (over current) channel and Fault every two channels
Power supply Vac	Internal setting 85÷132Vac 170÷264Vac (default)	Internal setting 85÷132Vac 170÷264Vac (default)
Absorption	600VA (@ max power with music signal)	1200VA (@ max power with music signal)
Operating conditions	-20°C+40°C with max. humidity <90%	-20°C+40°C with max. humidity <90%
Protections	Short-circuit (OC), thermal (Fault)	Short-circuit (OC), thermal (Fault)
Cooling	1 ø 60mm fan	2 ø 60mm fan
Dimensions (WxHxD)	482x88x430mm (2 U rack)	482x88x430mm (2 U rack)

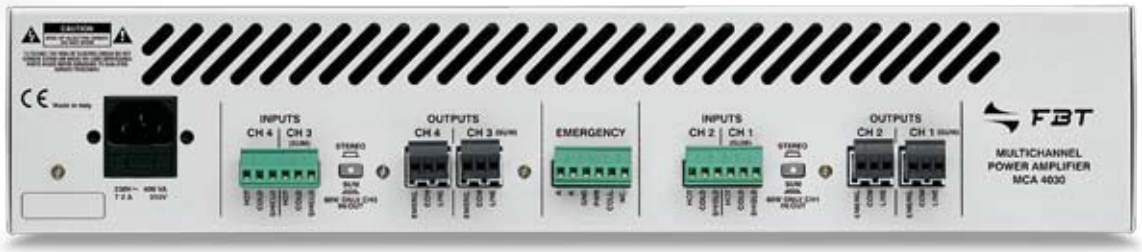
MCA 4030

MULTI-CHANNEL CONSTANT VOLTAGE (100 V)



Monoblock power amplifier with 4 independent channels and 4 100V line transformers

- Configurations possible: 4x30W or 2x60W on 100V
- Level control on front panel
- Luminous indication of the operating mode
- Emergency control with an output open collector and an input for the alarm signal activation command
- Outputs with 3 wires for line, common and emergency



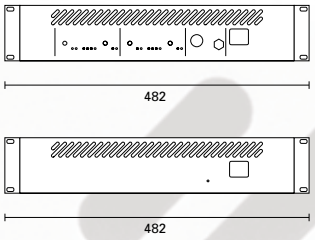
	MCA 4030
Code	**20236**
Characteristics	Monoblock amplifier with 4 channels
Continuous power with all	4x30W (100V) 2X60W (100V) piloted channels
Frequency response @1 W, -3dB	from 20Hz to 50 kHz
Harmonic distortion THD+N	< 0.05%
Signal/noise ratio	85dB (with filter 22Hz-22kHz)
Separation between channels	-66dB @100Hz, -75dB @ 1kHz, -70dB @ 10kHz
Inputs	A and B balanced, with screw connector (B priority)
Input impedance	10kOhm (unbalanced) 20kOhm (balanced)
Input sensitivity	0dBu (0.775V) with balanced input, 6dBu (1.5) with unbalanced input
Controls	Volume control for each channel
Indicators	Visual led indicators for each channel
Output connector type	"Faston" connectors
VAC power supply	100V÷230V - 50Hz÷60Hz with internal power supply unit
Absorption	300 W (@ max power with music signal)
Operating conditions	-20°C+40°C with max. humidity <90%
Protections	Thermal, short circuit, soft start
Dimensions	482x88x220mm (2 U rack)

MCA 4060

MULTI-CHANNEL LOW IMPEDANCE

LTU 4060

LINE TRANSFORMERS (100 V)



Power amplifier 4x60W
The pairs of channels 1/2 and 3/4 can operate independently:
- In parallel (input signal of ch 1 pilots also ch 2);
- in stereo (each channel has a different signal on input);
- "bridge" (inputs are powered with the same signal in reverse phase) both in parallel and in stereo; each amplifier delivers 60W/ 4 0hm while in bridge mode power delivered by each pair of amplifiers will be 120W/ 8 0hm. Each channel has volume control, luminous indicators of the input signal and saturation. The front panel also has luminous indicators for operating modes (bridge, parallel, stereo).

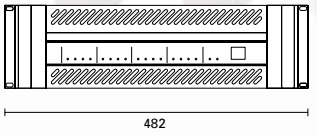
Power amplifier with 4 line transformers
- Activation of emergency on all channels simultaneously

Retro LTU 4060

	MCA 4060	LTU 4060
Code	**14753**	**14763**
Features	Monoblock amplifier with 4 channels	Unit with 4 line transformers
Continuous power with all piloted channels	4x60W (4ohm)	-
Input power per channel	-	60W (4ohm)
Output per channel	-	60W a 100V/167ohm
Output with two added channels	-	2x120W a 100V
Minimum load impedance	4ohm (in stereo), 8ohm (in bridge)	-
Frequency response @1 W, -3dB	da 20Hz a 50 kHz	1dB 20Hz, -3dB 16kHz
Harmonic distortion THD+N	< 0.05%	-
Signal/noise ratio	85dB (with filter 22Hz-22kHz)	-
Separation between channels	-66dB @100Hz, -75dB @ 1kHz, -70dB @ 10kHz	-
Input impedance	10kohm (unbalanced) 20kohm (balanced)	-
Input sensitivity	0dBu (0.775V) with balanced input, 6dBu (1.5) with unbalanced input	-
Controls	Volume control for each channel	-
Indicators	Visual led indicators for each channel	-
Input connector	-	2 "Faston" connectors
Output connector	"Faston" connectors	3 "Faston" connectors
Power supply Vac	230 V 50 Hz	-
Absorption	300 W (@ max power with music signal)	-
Operating conditions	-20°C+40°C with max. humidity <90%	-
Protections	Thermal, short circuit, soft start	-
Dimensions (WxHxD)	482x88x220mm (2 U rack)	482x88x220mm (2 U rack)
Accessories	LTU 4060 Line transformer panel	-

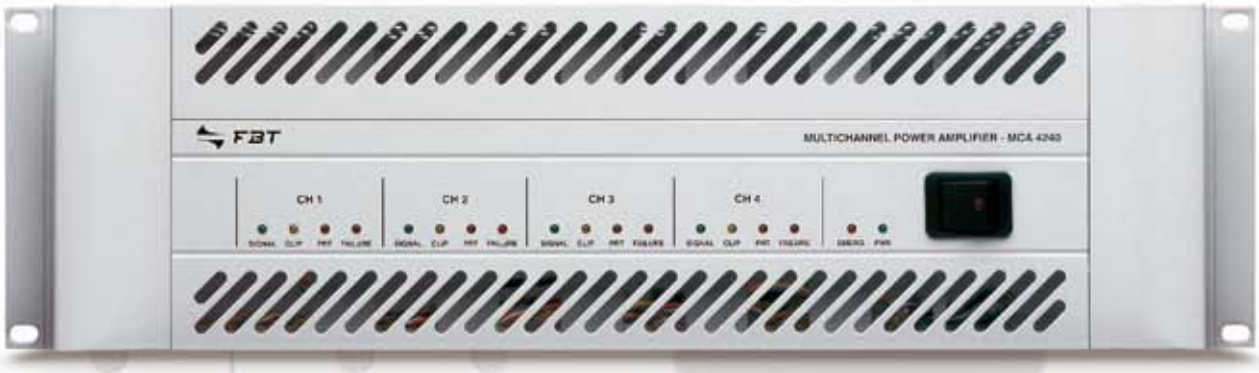
MCA 4240 A

MULTI-CHANNEL CONSTANT VOLTAGE (100 V)

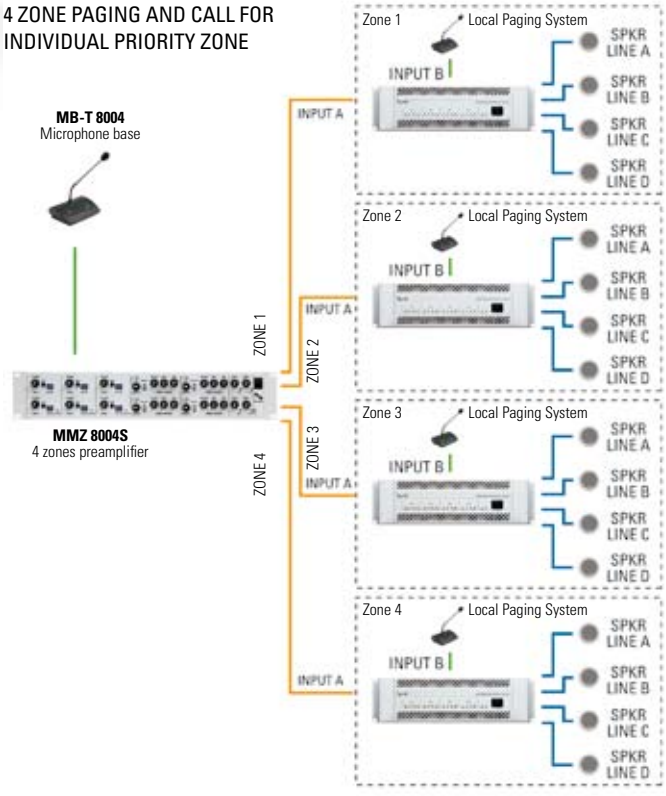


Power amplifier with 4 independent channels of 316W each

- 4 output transformers for constant voltage systems, with several output sockets
- Frequency response 40Hz-20kHz
- Configurations possible 4x316W RMS, 2x632W RMS, 1x1264W RMS
- Designed to operate in emergency conditions
- 2 inputs for each power stage, one of which has priority over the other
- Phantom power supply
- Optional card for remote volume control (MMZ-VRC)
- Remote failure signal control, which may also command a recovery module
- Protections: thermal, short circuit and fuse on each amplifier
- PWM technology with 90% performance
- 3 rack units



4 ZONE PAGING AND CALL FOR INDIVIDUAL PRIORITY ZONE



	MCA 4240 A
Code	**17758**
Characteristics	Monoblock amplifier with 4 channels 4x316 W RMS
Continuous power with all piloted channels	4x316 W RMS at 100V, 50V, 33V or 8 Ohm, 25V or 4 Ohm 2x632 W RMS at 100V, 70V, 50V 1x1264 W RMS at 100V, 70V
Frequency response @1 W measured on output 33V	40Hz÷20kHz
Harmonic distortion THD+N @ 240 W RMS, 1kHz	< 0.1%
Signal/noise ratio	80dB (with filter 22Hz-22kHz)
Separation between channels	-66dB @100Hz, -75dB @ 1kHz, -70dB @ 10kHz
Inputs	A and B balanced, with screw connector (B priority)
Input impedance	10kOhm (unbalanced) 20kOhm (balanced)
Input sensitivity	0dBu (0.775V) with balanced input, 6dBu with unbalanced input
Controls	Level control for each channel on rear panel
Emergency input signals	0 dBu
"Failure" Output, Emergency	Open collector 12 VDC/80mA max
Phantom Power supply	48 V activated on all B inputs of each channel
Output power supply	Power supply ±15 VDC, max 100mA on each channel
Output connector type	three "Faston" connectors: common, line, emergency
VAC power supply	230V 50 Hz
Absorption	1000 W (@ max power with music signal)
Operating conditions	-20°C+40°C with max. humidity < 90%
Protections	Thermal, short circuit, fuse on each amplifier
Dimensions	482x132x430mm (3 U rack)
LED indicators for each power stage	Input signal, saturation, thermal protection, power stage malfunction
Optional accessories	Card for remote volume control of 2 channels Model MMZ-VRC

CM

RACKS

Rack
depth 500mm, ready-to-assemble kit, made of sheet steel with RAL 7035 paint finish, comprising:
- Base (W=534xD=500mm) with four M10 threaded fittings
- Lid (W=534xD=500mm)
- Two side panels with 19" vertical pitch and ventilation slits
- Four swivel castors
- Assembly hardware set

Note: 1U = 44mm

Grey racks RAL7035

	CM 08	CM 12	CM 18	CM 22	CM 26
Code	12682	12681	12385	11827	12669
Description	8U	12U	18U	22U	26U
Dimensions WxD	500x530	500x530	500x530	500x530	500x530
Dimensions H	400	580	850	1030	1200
Weight	19	22,6	27,2	30	34,3

Plexiglas doors with lock

	AP 08	AP 12	AP 18	AP 22	AP 26
Code	12897	12898	12667	12178	12668
Description	8U	12U	18U	22U	26U

Rear perforated panels

	PP-A 02	PP-A 08	PP-A 12
Code	12899	12900	12901
Description	2U	8U	12U

AR

RACK CABINETS

Rack cabinet
depth 500mm, ready-to-assemble kit, made of sheet steel with RAL 7035 paint finish, comprising:
- Base (W=595xD=525mm) with four M10 threaded fittings, and cable ducting opening 300x300
- Lid (W=595xD=525mm) with cable ducting opening 200x200 and provision for 4 fans
- Two side panels with 19" vertical pitch with ventilation slits
- Solid rear panel
- Reversible hinged door with plexiglas window and lock
- Four swivel castors
- Assembly hardware set

Note: 1U = 44mm

Grey racks RAL7035

	AR 12	AR 18	AR 22
Code	12902	12665	12666
Description	12U	18U	22U
Dimensions WxD	525x595	525x595	1060
Dimensions H	620	880	850
Weight	38	46,5	53

ACCESSORIES

SO — Pair of omega rack supports

Model	Code	Height	Weight	Cabinet
SO-12	**12907**	532mm	1,4 kg	AR12

Model	Code	Height	Weight	Cabinet
SO-18	**12908**	800mm	2,1 kg	AR18
SO-22	**12909**	978mm	2,6 kg	AR22

PA-A PC — Cabinet panels

Model	Code	Description	Colour
PA-A 01	**12905**	Perforated 1U	grey RAL7035
PC 01	**12117**	Solid 1U	grey RAL7035
PC 02	**12116**	Solid 2U	grey RAL7035
PC 03	**12912**	Solid 3U	grey RAL7035

RP 02 — Universal internal shelf

Model	Code	Description	Colour
RP 02	**12913**	2U	grey RAL7035

SA 02 — Rack upright

Model	Code
SA 02	**12906**

DG 01 — Cage nut

Model	Code	Pack
DG 01	**12114**	50 pcs

MUSIC SOURCES AND POWER SUPPLY PANEL

CC-02 — Double cassette player/recorder

Code 05238
(3 rack units)

CD-05 — Multiple CD player

Code 05377
Multiple CD (5CD) player
(3 rack units)

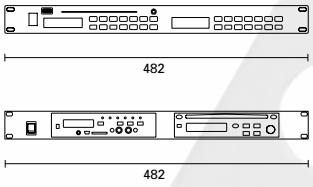
DT-16 — Digital tuner

Code 05239
AM/FM digital tuner
(1 rack unit)

MPS1016 — Power Supply Panel

Code 04693
(1 rack unit)

MS02 CD3/T



Dual source

- 2 sections, each one featuring a stereo output with its own volume control
- One selector, shared by both sources, can mix stereo channels changing to MONO the CD and radio output for applications that do not need stereo sound
- It can be installed into a 19" rack 1U
- The CD player can play audio tracks and MP3 files from compact disc (CD, CD-R, CD-R/W) or USB drives ("Flash memory-stick with mp3 files)
- USB port on the front panel
- FM radio tuner (87.5-108 MHz) that can store up to 10 radio stations
- LCD display

MS02 CD3/DG

Dual source

- 2 sections, each one featuring a stereo output with its own volume control
- CD output and output for the digital recording unit
- REC input to record in the digital recording unit
- It can be installed into a 19" rack 1U
- The CD player can play audio tracks and MP3 files from compact disc (CD, CD-R, CD-R/W)
- The LCD display shows information on CD or MP3 files being played
- The digital voice recorder can record up to 99 tracks in the 128MB integrated flash memory or in a SD memory, in VOC or MP3 mode
- The 128 MB integrated memory can store approximately 120 min recording
- VOC mode (recording from micro-phone or LINE IN source) or MP3 mode (mp3 file download from PC)
- Headphone Output
- USB port for mp3 files easy transfer from PC
- Compatible SD card up to 1 GB (512 MB SD cards allow more than 8 hour recording)
- MIC IN for 2 microphones input

MS02 CD3/T

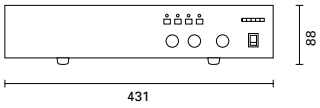
MS02 CD/DG

Remote control included with MS02 CD3/T

	MS02 CD3/T	MS02 CD3/DG
Code	**27867**	**27868**
Tuner	AM/FM	AM/FM
Memories for the tuner (FM10 e AM10)	20	20
Mechanics	Antishock mechanics and electronics CD player that can play CD, CD-R, CD-R/W, MP3, USB MP3	Antishock mechanics and electronics CD player that can play CD, CD-R, CD-R/W, MP3, USB MP3
Inputs/Outputs	Input: unbalanced 75ohm FM Antenna terminals - AM antenna loop terminals - USB port for memory stick - Output: audio RCA for AM/FM tuner - audio RCA for CD player	Input: unbalanced 75ohm FM Antenna terminals - AM antenna loop terminals - USB port for memory stick - Output: audio RCA for AM/FM tuner - audio RCA for CD player
Power supply	220Vac	220Vac
Power consumption	50VA	50VA
Weight	3.5 kg	3.5 kg
Dimensions (WxHxD)	482x44x250mm	482x44x250mm

MPA 3120 (120W RMS) - MPA 3240 (240W RMS)

POWER UNIT



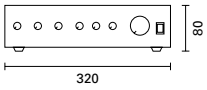
120W and 240W Power amplifiers

- Three selectable zones through front switches
- High/Low frequencies and main volume control
- LED with dB output measurement
- Signal of the selected music source available as MOH, "Music on Hold", 1W/8 ohm output for monitor loudspeaker or for other instruments, such as telephone switchboards
- 2-tone DING-DONG chime with on/off button and volume control
- Electronically balanced input and output lines, male/female connectors allowing the cascade connection of several units
- Input dedicated to the connection of a private telephone switchboard to transmit high-priority messages/emergency signals
- Priority function with external contact
- Output for the selected zone
- 100V/70V/50V 8 Ohm output
- Switch for 115V/230V voltage selection; External DC 24V power supply
- Cooling fan with automatic adjustment according to the temperature of the heat sink
- Protection of the output stage and transformer for constant voltage lines

	MPA 3120	MPA 3240
Code	**29408**	**29409**
Nominal output power @230Vca	120W	240W
Nominal output power @24Vcc	97W	156W
Constant voltage outputs	10, 70, 50V	10, 70, 50V
Low impedance outputs	8Ω	8Ω
Distortion at the nominal power	< 0.5%	< 0.5%
Low tones	-11dB (@100Hz)	-11dB (@100Hz)
High tones	-11dB (@100Hz)	-11dB (@100Hz)
LINE INPUT		
Input sensitivity/impedance	250mV/47kΩ	250mV/47kΩ
Signal/noise ratio	84dB	84dB
Frequency response	40÷22.000Hz (0/-3dB)	40÷22.000Hz (0/-3dB)
Precedence reduction	> 50dB	> 50dB
TELEPHONE INPUT		
Input sensitivity/impedance	120mV/5.7kΩ	120mV/5.7kΩ
Signal/noise ratio	84dB	84dB
Frequency response	200÷10.000Hz (0/-3dB)	200÷10.000Hz (0/-3dB)
SIGNAL OUTPUTS		
MOH line	1,4V/600kΩ	1,4V/600kΩ
MOH monitor power	1W/8Ω	1W/8Ω
Dimensions (WxHxD)	431x88x385mm	431x88x385mm

AM 5030

INTEGRATED AMPLIFIERS

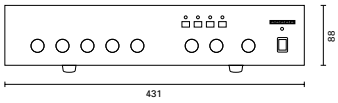


30W Integrated amplifier
- 2 microphone sockets
- Priority of microphone over music
- Low impedance and 100V outputs
- 2 rack units

	AM 5030
Code	**11583**
Features	100W desktop amplifier
Rated/Maximum power	30/40W
Frequency response	50÷18kHz
Distortion (Rated P. 1kHz)	<3%
Inputs/Sensitivity -Impedance	Linea 100mV
Output impedance	4-8-16ohm
Output voltage	100V
Tone controls	150Hz/1kHz-6kHz
VAC power supplies	220Vac
Weight	4,7 Kg
Dimensions (WxHxD)	320x80x190mm

MMA 3060 (60W RMS) MMA 3120 (120W RMS) MMA 3240 (240W RMS)

POWER UNIT



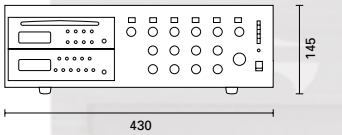
Integrated mixer amplifier, 3 wattages available

- 2 balanced MIC inputs and 2 MIC/LINE inputs, both for dynamic and electret/condenser (Phantom power) microphones, with separate control levels on the front panel
- 2 Auxiliary inputs with level control and switch on the front panel
- Preamplifier output for recorders, sound processors and/or cascade connection of other amplifiers
- Three zones selectable or all-call through front switches
- High/Low frequencies and main volume control
- LED with dB output measurement
- Signal of the selected music source available as MOH, "Music on Hold", 1W/8 ohm output for monitor loudspeaker or for other instruments, such as telephone switchboards
- 2-tone DING-DONG chime with on/off button and volume control
- Electronically balanced input and output lines, male/female connectors allowing the cascade connection of several units
- Input dedicated to the connection of a private telephone switchboard to transmit high-priority messages/ emergency signals
- Priority function with external contact; Output for the selected zone
- Switch for 115V/230V voltage selection; External DC 24V power supply
- Cooling fan with automatic adjustment according to the temperature of the heat sink
- Protection of the output stage and transformer for constant voltage lines

	MMA 3060	MMA 3120	MMA 3240
Code	**29405**	**29406**	**29407**
Nominal output power @230Vca	60W	120W	240W
Nominal output power @24Vcc	53W	97W	156W
Constant voltage outputs	100, 70, 50V	100, 70, 50V	100, 70, 50V
Low impedance outputs	8Ω	8Ω	8Ω
Distortion at the nominal power	< 0.5%	< 0.5%	< 0.5%
TONE CONTROLS			
Low tones	-11dB (@100Hz)	-11dB (@100Hz)	-11dB (@100Hz)
High tones	-11dB (@100Hz)	-11dB (@100Hz)	-11dB (@100Hz)
MICROPHONE INPUTS			
Input sensitivity/impedance	1,1mV/47kΩ	1,1mV/47kΩ	1,1mV/47kΩ
Signal/noise ratio	62dB	62dB	62dB
Frequency response	45÷19.000Hz (0/-3dB)	45÷19.000Hz (0/-3dB)	45÷19.000Hz (0/-3dB)
Phantom power supply	16.5V	16.5V	16.5V
LINE INPUT			
Input sensitivity/impedance	120mV/1000kΩ	120mV/1000kΩ	120mV/1000kΩ
Signal/noise ratio	82dB	82dB	82dB
Frequency response	40÷21.000Hz (0/-3dB)	40÷21.000Hz (0/-3dB)	40÷21.000Hz (0/-3dB)
TELEPHONE INPUT			
Input sensitivity/impedance	120mV/5.7kΩ	120mV/5.7kΩ	120mV/5.7kΩ
Signal/noise ratio	83dB	83dB	83dB
Frequency response	200÷10.000Hz (0/-3dB)	200÷10.000Hz (0/-3dB)	200÷10.000Hz (0/-3dB)
SIGNAL OUTPUTS			
MOH Line	1,4V/600kΩ	1,4V/600kΩ	1,4V/600kΩ
MOH monitor power	1W/8Ω	1W/8Ω	1W/8Ω
PRE OUT outputs	1V/600Ω	1V/600Ω	1V/600Ω
Dimensions (WxHxD)	431x88x385mm	431x88x385mm	431x88x385mm

MMA 6120 TCD/MP3 (120W RMS) - MMA 6240 TCD/MP3 (240W RMS)

INTEGRATED AMPLIFIERS



Integrated mixer amplifier, 2 wattages available

- 6 selectable independent zones
- 4 microphones inputs (XLR) and one external line source
- CD/MP3 player modules and tuner included
- Volume and high and low tones control for each input
- Loudspeaker connection at 25V, 70V, 100V and 8 Ohm on output.
- Amplifier operation shown by the LED, amplifier output level shown by means of 5 LED VU meter
- Signal of the selected music source available as MOH, "Music on Hold", 1W/8 ohm output for monitor loudspeaker or for other instruments, such as telephone switchboards
- Setting of different priority levels: from simple microphone priorities to higher priority for emergency calls
- 24V Emergency power supply to allow operation failing main power supply
- 1 to 3-tone DING-DONG chime that can be activated by external contact
- CD/MP3 module: Random play, one track repeat, disk repeat functions; 20 track playlist programming
- Tuner: AM/FM frequencies; automatic station scan; up to 10 storable stations
- Can be integrated with an optional MBT8006 microphone base for zone remote selection and announcements

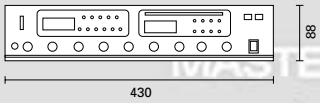
MBT 8006 Desk mic. base

Code 30384
look at pag. 36

	MMA 6120 TCD/MP3	MMA 6240 TCD/MP
Code	**29403**	**29404**
Main power supply voltage	AC 115V/230V, 50/60Hz±10% selectable	AC 115V/230V, 50/60Hz±10% selectable
Battery power supply	DC 24V (max 10% deviation)	DC 24V (max 10% deviation)
Rated power	240W	120W
Outputs	Music/Sppech 8ohm, 25V, 70V, 100V sel. Line out 600ohm, 1V Moh outputs 8ohm, 1W/600ohm, 1V bal.	Music/Sppech 8ohm, 25V, 70V, 100V sel. Line out 600ohm, 1V Moh outputs 8ohm, 1W/600ohm, 1V bal.
Inputs	**MIC 1** 200ohm, 1mV, symmetric with phantom power selectable to LINE switchable **MIC 2 ÷ 4** 250ohm, 1mV, symmetric with phantom power selectable **AUX** 600mV, unbalanced **TEL** 0.1~1V, 600ohm, adjustable, balanced	**MIC 1** 200ohm, 1mV, symmetric with phantom power selectable to LINE switchable **MIC 2 / MIC 3 / MIC 4** 250ohm, 1mV, symmetric with phantom power selectable **AUX** 600mV, unbalanced **TEL** 0.1~1V, 600ohm, adjustable, balanced
Frequency response	**MIC 1 ÷ 4** 60Hz~15kHz±3dB	**MIC 1~MIC 4** 60Hz~15kHz±3dB
Total harmonic distortion	Less than 1% al 1kHz, rated power	Less than 1% al 1kHz, rated power
Signal/noise ratio	**All vol. controls C.C.W.** 75dB below rated power **MIC 1 ÷ 4** 60dB below rated power **TEL** 70dB below rated power **LINE** (AUX/CD) 70dB below rated power	**All vol. controls C.C.W.** 75dB below rated power **MIC 1~MIC 4** 60dB below rated power **TEL** 70dB below rated power **LINE** (AUX/CD) 70dB below rated power
Tone controls	**BASS/TREBLE** ± 10dB at 100Hz	**BASS** ± 10dB at 100Hz
Controls	**MIC 1 ÷ 4** volume control **LINE** (AUX/Tuner/Cassette/CD) volume control **MASTER** volume control **TEL** input level control **MOH** output level control **TONE** controls (Bass, Treble) Zone 1÷ 6 buttons AC 115V/230V voltage selector switch	**MIC 1~MIC 4** volume control **LINE** (AUX/Tuner/Cassette/CD) volume control **MASTER** volume control **TEL** input level control **MOH** output level control **TONE** controls (Bass, Treble) Zone 1÷ 6 buttons AC 115V/230V voltage selector switch
AC Power consumption	760W	350W
DC Power consumption	16A	16A
Dimensions (WxHxD)	430x145x360mm	430x145x360mm

MA 5120 - TCD/MP3

INTEGRATED AMPLIFIERS



120/180 Watt
Integrated amplifier

- 4 micro balanced inputs
- 1 auxiliary input with selection
- 1 CD player with MP3
- 1 digital tuner
- 3 output zones, 2 of which with selection
- 8 Ohm and 25/70/100V outputs
- Pre-out output
- Chime signal
- 2 rack units

RMK-5000 — Rack mounting brackets

Code 18016

CD-MP3 — MP3 player

Code	**23602**
Features	CD/MP3 player
Distortion	< 0,1%
S/N	> 80dB
Output	850mV
Functions	Eject/stop, pause/play, next key, previous key, power, program, random, repeat, file MP3

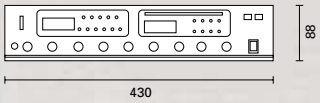
TM-2 — AM/FM tuner module

Code	**18019**
Features	AM/FM tuner
Frequenza	FM 87,5 ~ 108MHz AM 522 ~ 1620kHz
Sensitivity	FM 2iV (26dB S/N) AM 30iV (20dB S/N)
Frequency response	30Hz ~ 15KHz (+1/-3dB)
Distortion	< 0,1%
S/N	> 63dB(1mV, FM)
Output	500mV (0 ~ 1V adjustable)

	MA 5120-TCD/MP3
Code	**23601**
Features	PA amplifier with music modules
Power supply	**AC** 115V/230V 50/60Hz ±10%, with selection **DC** 24V (max.10% deviation)
Output power	MAX 180W RATED 120W
Outputs	speaker outputs 8 Ohm, 25V, 70V, 100V MOH output 8 Ohm, 1W / 600 Ohm, 1V balanced - line output 600 Ohm, 1V
Inputs	Mic1/Mic2/Mic3/Mic4 250 Ohm, 1mV, balanced with phantom with selection (Jump 1 / 2 / 3 / 4) Aux 47 KOhm, 200mV, unbalanced - Tel 0.1~1V, 600 Ohm, adjustable, balanced
Frequency response	60Hz÷15KHz ± 3dB
THD	less than 1% at 1 kHz, rated power
Signal/noise ratio	all the C.C.W. volume controls 75dB at rated power - mic1/4 60dB at rated power aux 70dB at rated power - tel 70dB at rated power
Tone Controls	Bass ±10dB at 100Hz Treble ±10dB at 10kHz
Controls	Mic1/Mic 4 volume, Line volume (Aux/Tuner/CD/Cassette), general volume, telephone input, MOH output, tones (Bass, Treble), Zone 1 and 2selection switch, power supply selection AC 115V/230V
Indicators	ON/OFF (LED), VU- meter (3 LEDS)
AC/DC Power supply	AC 400 watts DC 8A
CHIME	2 tones
Priority	priority lev. (used for mic1, XLR conn. or jack socket) Tel/emer.(3) Mic1(2) Mic2(1) Mic3(1) Mic4(1) Aux/Tuner/CD-tape(1)
Dimensions (WxHxD)	430x88x385mm
Weight	10 kg
Optional accessories	19" rack mounting brackets RMK 5000
Modules included	CD-MP3 CD and MP3 player. TM-2 AM-FM tuner

MA 5240

INTEGRATED AMPLIFIERS



240/360 Watt Integrated amplifier
- 4 micro balanced inputs
- 1 auxiliary input with selection
- 3 output zones, 2 of which with selection
- 8 Ohm and 25/70/100V outputs
- Pre-out output
- Chime signal
- 2 rack units

RMK-5000 — Rack mounting brackets

Code 18016

CP-2 — Cassette player module

Code	**18018**
Features	Cassette player
WOW/Flutter	0,45%
Tape speed	2940 ~ 3090Hz
Frequency response	125Hz ~ 6,3kHz ±4dB
S/N	40dB
Distorsione	3%
Output	500mV (0 ~ 1V adjustable)

CD-MP3 — MP3 player

Code	**23602**
Features	CD/MP3 player
Distortion	< 0,1%
S/N	> 80dB
Output	850mV
Functions	Eject/stop, pause/play, next key, previous key, power, program, random, repeat, file MP3

TM-2 — AM/FM tuner module

Code	**18019**
Features	AM/FM tuner
Frequenza	FM 87,5 ~ 108MHz AM 522 ~ 1620kHz
Sensitivity	FM 2iV (26dB S/N) AM 30iV (20dB S/N)
Frequency response	30Hz ~ 15KHz (+1/-3dB)
Distortion	< 0,1%
S/N	> 63dB(1mV, FM)
Output	500mV (0 ~ 1V adjustable)

	MA 5240
Code	**19407**
Features	PA amplifier with music modules
Power supply	AC 115V/230V, 50/60Hz ±10% with selection DC 24V (max.10% deviation)
Output power	**MAX** 360W **RATED** 240W
Outputs	speaker outputs 8 Ohm, 25V, 70V, 100V MOH output 8 Ohm, 1 W/600 Ohm1V balanced line output 600 Ohm, 1V
Inputs	Mic1/Mic2/Mic3/Mic4 250 Ohm, 1mV, balanced with phantom with selection (Jump 1 / 2 / 3 / 4) Aux 47 KOhm, 200mV, unbalanced Tel 0.1~1V, 600 Ohm, adjustable, balanced
Frequency response	60Hz~15K HZ ±3dB
THD	less than 1% at 1 kHz, rated power
Signal/noise ratio	all the C.C.W. volume controls 75dB at rated power mic1/4 60dB at rated power aux 70dB at rated power tel 70dB at rated power
Tone Controls	Bass ±10dB a100Hz Treble ±10dB a10kHz
Controls	Mic1/Mic 4 volume, Line volume (Aux/Tuner/CD/ Cassette), general volume, telephone input, MOH output, tones (Bass, Treble), Zone 1 and 2 selection switch, power supply selector AC 115
Indicators	ON/OFF (LED), VU- meter (3 LEDS)
AC	power supply 400 watts
DC power	supply 8A
CHIME	2 tones
Priority (VOX)	priority level (used for mic1, XLR connector or phone jack) Tel/emer(3) Mic1(2) Mic2(1) Mic3(1) Mic4(1) Aux/Tuner/CD-t
Dimensions (WxHxD)	430x88x385mm
Weight	10 kg
Accessories included	19" RMK 5000 rack mounting brackets
Optional modules	**CD-2 CD** player **TM-2 AM-FM** tuner **CP-2** cassette player

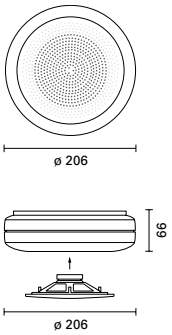
FBT Audio Contractor

CEILING LOUDSPEAKERS
SOUND PROJECTORS

Sound Design Project
for Fuzen Sushi Restaurant - Grand Hotel Oasis
(Bulgaria)

BLC 550 T

ABS SURFACE MOUNTING WALL LOUDSPEAKERS



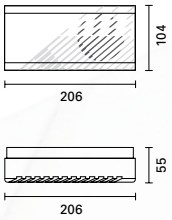
DNH ABS surface mounting wall or ceiling loudspeaker

- Power 6 Watt
- 100V transformer
- SPL 1W/1m 90dB
- Dispersion (-6dB) 1kHz/4kHz 170°/50°
- White RAL9010 colour

	BLC 550 T
Code	**09355**
Features	Loudspeaker with transformer
Mounting system	Screw terminals
Rated/Maximum power	6/15W RMS
Colour	White
Frequency response	150÷15.000Hz
Sensitivity 1W/1m	90dB
Maximum SPL 1m	97dB
Weight	1,2 Kg
Dimensions	ø 206x66mm

SAFE 10 PT

ABS SURFACE MOUNTING WALL LOUDSPEAKER



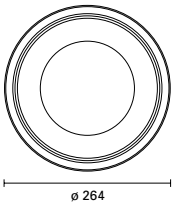
DNH surface mounting self-extinguishing polycarbonate wall loudspeaker

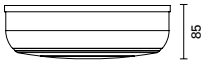
- Power 6 Watt
- 100V transformer
- SPL 1W/1m 85dB
- Dispersion (-6dB) 1kHz/4kHz 140°/100°
- Grey RAL7035 colour

	SAFE 10 PT
Code	**09356**
Features	IP56 weatherproof and V0 self-extinguishing, with transformer
Mounting system	Screw terminals
Rated/Maximum power	10/15W RMS
Colour	Grey
Frequency response	150÷20.000Hz
Sensitivity 1W/1m	85dB
Maximum SPL 1m	95dB
Weight	0,8 Kg
Dimensions (WxHxD)	206x55x104mm

WCS 650

CEILING/WALL SPEAKER





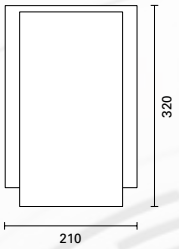
ABS ceiling/wall sound speaker

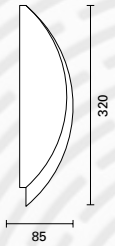
- 10Watt dual cone loudspeaker with 153 g ferrite magnet
- 70V/100V line transformer and loudspeaker with 6,5" cone
- Easy mounting with the supports included

	WCS 650
Code	**29470**
Features	ABS
Colour	White
Frequency response	80÷18kHz
Sensitivity 1W/1m	93dB
Rated/Maximum power	2.5W / 5W / 10W RMS
Transformer	100V
DC impedance	7,2ohm
Weight	1 Kg
Dimensions	ø 264x85mm

WSH 1006

CEILING/WALL SPEAKER





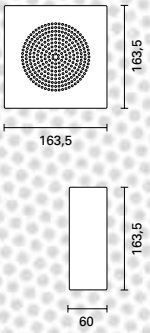
Sound speaker with painted metal protective grille

- 6 Watt dual cone loudspeaker with 153 g ferrite magnet
- Mounted horizontally or vertically
- 70V/100V line transformer and loudspeaker with 5.5" cone
- Easy mounting thanks to the hole cover plugs provided

	WSH 1006
Code	**29419**
Features	ABS
Colour	White
Frequency response	100÷15kHz
SPL	98dB at 100V 6W
Sensitivity 1W/1m	91dB
Rated/Maximum power	3W / 6W RMS
Transformer	100V
DC impedance	6,8ohm
Weight	1,4 Kg
Dimensions (WxHxD)	210x320x85mm

WS506T/VA

SOUND SPEAKERS



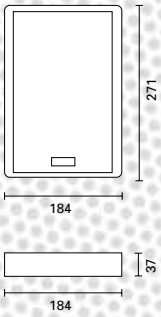
Multifunction sound speaker

- Conforming to world standards for voice alarms (BS5839 part 8 included) requiring that in the event of fire the whole loudspeaker circuit shall not be affected by one or more loudspeakers damaged by localized fire
- It features ceramic connectors that can resist to temperatures higher than 650°C
- Fire-resistant internal cable
- Pair of input/output cable sleeves for easy wiring
- 150° thermal fuse for insulating the loudspeaker from the circuit in case of fire detection

	WS506T/VA
Code	**29434**
Rated/Maximum power	6/8 Watt RMS
Colour	White RAL9010
Frequency response	150÷18.000Hz
SPL (1W/1m)	91dB
Power Taps @100V	6W, 3W, 1.5W & 0.75W
Weight	2 Kg
Dimensions (WxHxD)	163,5x163,5x60mm

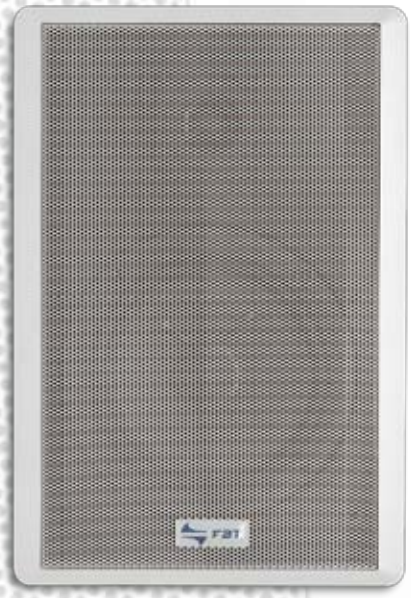
FPS/5T

ABS SURFACE MOUNTING WALL LOUDSPEAKERS



PVC flush mounting wall loudspeaker

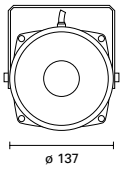
- 2-way
- Rated power 20W at 4 Ohm
- Dispersion (-6dB) 1kHz/4kHz 150°/70°
- Power 6 Watt with 100V transformer
- Woofer 5" 1/4 with dome tweeter
- SPL @1W/1m 87dB
- White colour

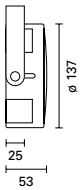


	FPS/5T
Code	**18020**
Features	Loudspeaker with transformer
Mounting system	Screw fit
Rated/Maximum power (100V)	6/8 Watt RMS
Colour	Grey
Frequency response	160÷14.000Hz
Sensitivity 1W/1m	87dB
Maximum SPL 1m	96dB
Input voltage	100V
Weight	1,1 Kg
Dimensions (WxHxD)	184x271x37mm

AQUA 30

LOUDSPEAKER FOR UNDERWATER AND CLEAN ROOM APPLICATIONS





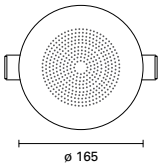
DNH ABS wall or surface mounted loudspeaker for underwater or clean room applications

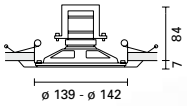
- IP68 grade of protection
- Rated power 20W at 8 Ohm
- Max/min operating temperature 90 C°/-30°C
- Dispersion (-6dB) 1kHz/4kHz 180°/180°
- SPL 1W/1m 105dB
- White colour
- Guarantees superb audio quality for the reproduction of music and speech in underwater environments, positioned at a max of 2 metres below the water's surface

	AQUA 30
Code	**10436**
Features	IP68 watertight
Mounting system	Recessed or on bracket included
Rated/Maximum power	20/30 Watt
Colour	Blue NCS 1070B
Frequency response	80÷20.000 Hz
Sensitivity 1W/1m	105dB
Maximum SPL 1m	118dB
Weight	2,5 Kg
Dimensions	ø 137x53mm

BK 560 CRT

LOUDSPEAKER FOR CLEAN ROOMS





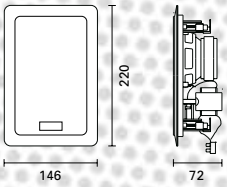
DNH aluminium ceiling loudspeaker with paint finish

- Specifically designed for use in sterile environments
- Loudspeaker fitted with special protections to ensure that no dust or airborne particles are generated or affect operation
- Rated power 6W
- Sensitivity 1W/1m 88dB 100V transformer
- Dispersion (-6dB) 1kHz/4kHz 170°/60°
- Grey RAL9010 colour

	BK 560 CRT
Code	**09309**
Features	Developed for clean rooms
Mounting system	Spring-clips
Rated/Maximum power	6 Watt
Colour	White RAL 9010
Frequency response	70÷15.000 Hz
Sensitivity 1W/1m	88dB
Maximum SPL 1m	95dB
Weight	1,1 Kg
Dimensions	ø 165x84mm

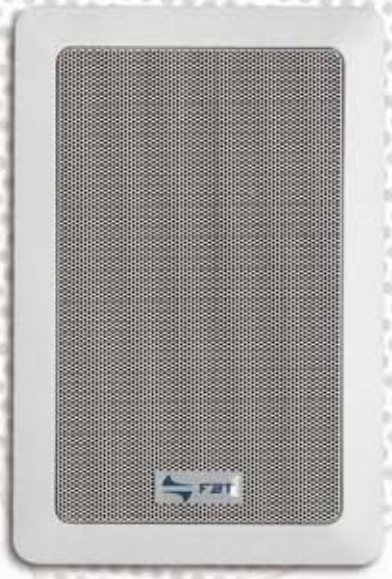
IW-100 T

ABS SURFACE MOUNTING CEILING LOUDSPEAKER



ABS surface mounting ceiling loudspeaker

- 2-way with 4" woofer and 1" dome tweeter
- Rated power 1/2/4/7.5/15W RMS with 100V transformer
- Frequency response 60-20,000Hz, sensitivity @1W/1m of 88dB
- Dispersion (-6dB) 1kHz/4kHz 80°/150°



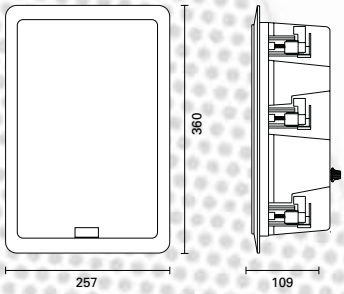
	IW-100 T
Code	**17859**
Rated/Maximum power	1/2/4/7,5/15W RMS
Loudspeaker	2-way coaxial, 4" woofer with 1" dome tweeter
Frequency response	60÷20.000Hz
Sensitivity 1W/1m	88dB
Maximum SPL 1m	99dB
Input voltage	100V-70V
Weight	1,3 Kg
Dimensions (WxHxD)	146x220x72mm
Cut-out diameter	195x120mm
Accessories	surface mounting recess RB100

RB-100 Surface mounting recess

Code 18159
Surface mounting recess for IW-100T loudspeakers

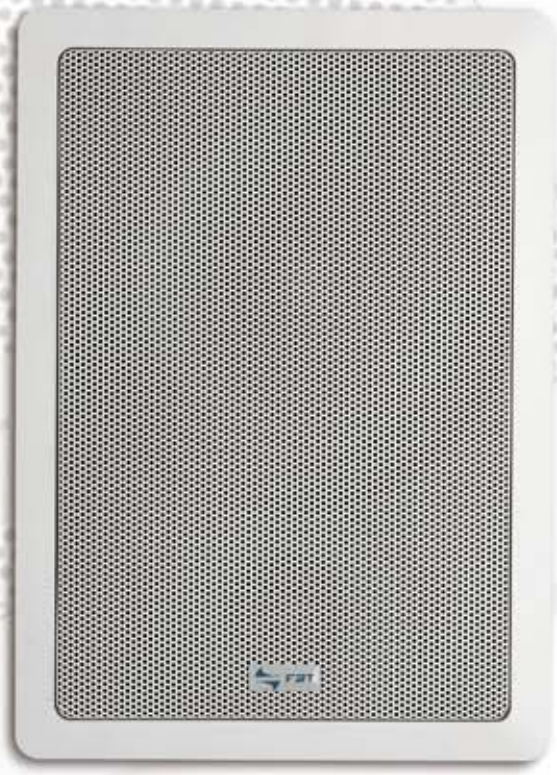
IW-200 TCP

ABS SURFACE MOUNTING CEILING LOUDSPEAKER



ABS surface mounting ceiling loudspeaker

- 2-way with 8" woofer and 1" dome tweeter
- Rated power 1/2/4/7.5/15/30W RMS
- 100V transformer
- Frequency response 40-20,000Hz, sensitivity @1W/1m of 90dB
- ABS base
- Dispersion (-6dB) 1kHz/4kHz 80°/140°



	IW-200 TCP
Code	**17862**
Rated/Maximum power	2/4/7.5/15/30W RMS with transformer
Loudspeaker	100V with regulator 2-way coaxial, 8" woofer with 1" dome tweeter
Frequency response	40÷20.000Hz
Sensitivity 1W/1m	90dB
Maximum SPL 1m	105dB
Input voltage	100V-70V
Weight	3 Kg
Dimensions (WxHxD)	257x360x109mm
Cut-out diameter	225x330mm
Accessories	surface mounting recess RB200

RB-200 Surface mounting recess

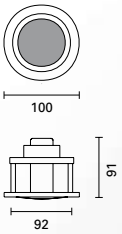
Code 18160
Surface mounting recess for IW-200T loudspeakers

MCS 1006/TC/TG

MINI SURFACE MOUNTING LOUDSPEAKERS

ABS in-ceiling sound speaker with metal protection grille

- Dual cone loudspeaker
- Rated power 6 Watt with 100V transformer
- Frequency response 170-18,000 Hz
- Sensitivity @1W/1m 91dB



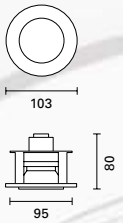
	MCS 1006/TC	MCS 1006/TG
Code	**14042**	**14043**
Features	In-ceiling speaker, ABS body and metal protection grille, equipped with 100V line transformer	
Fixing system	Built-in with retention springs	
Rated/Maximum power	100V: 6 Watt, 3 Watt, 1,5 Watt 70V: 3 Watt, 1,5 Watt, 0,75 Watt	
Colour	White	Chrome
Frequency response	170:18.000Hz	
Sensitivity 1W/1m	88dB	
Maximum sound pressure 1m	95dB	
Input voltage	100V-70V	
Building-in hole	92mm	
Weight	0,5 Kg	
Dimensions	ø 100x91mm	
Maximum overhang	5mm	

MCSL 006 TW

BUILT-IN SPEAKERS

ABS in-ceiling speaker with metal protection grille

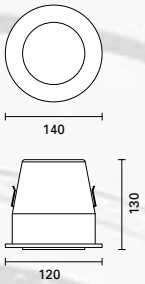
- Colour white RAL9016
- Full range 2,5" dual cone



MCSL 006 TWP

ABS watertight (IP55) in-ceiling speaker with metal protection grille

- ABS back cover equipped with cable sleeve to ensure good sealing
- Colour white RAL9016
- Full range 4" dual cone

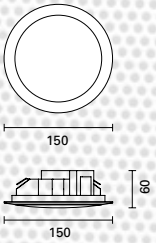


	MCSL 006/TW	MCSL 006/TW
Code	**29425**	**29426**
Features	In-ceiling speaker ABS body and metal protection grille	
Rated/Maximum power	1.5/3/6W	1.5/3/6W
Frequency response	120:20.000Hz	150:18.000Hz
Sensitivity 1W/1m	87dB	91dB
Maximum SPL 1m	91dB	95dB
Input voltage	100V	100V
Cut-out diameter	95mm	125mm
Weight	0,5 Kg	0,9 Kg
Dimensions	ø 103x80mm	ø 140x130mm

CSL 106/T

BUILT-IN SPEAKERS

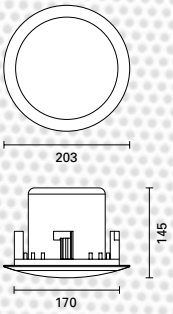
Built-in speaker with painted metal grille
- Colour white RAL9016
- Dual cone loudspeaker with 5" woofer



CSL 520 TIC

BUILT-IN SPEAKERS

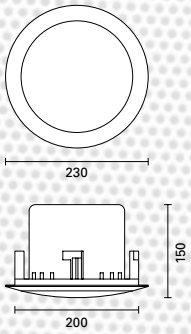
ABS in-ceiling speaker with metal protection grille
- Metal back cover
- Colour white RAL9016,
- Coaxial loudspeaker with 5" woofer and 1/2" tweeter
- 88dB+/- 3dB sensitivity @1W/1m
- Nominal Power 2,5/5/10/20W/8ohm with 100V/70V line transformer
- Building-in hole 200mm



CSL 630 TIC

BUILT-IN SPEAKERS

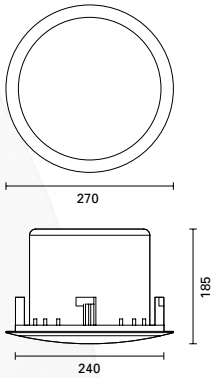
ABS in-ceiling speaker with metal protection grille
- Metal back cover
- Colour white RAL9016,
- Coaxial loudspeaker with 6" woofer and 1/2" tweeter
- Nominal Power 3.8/7.5/15/30W/8Ohm with 100V/70V line transformer
- 90-20,000Hz frequency response
- 88dB+/- 3dB sensitivity @1W/1m
- Diameter 230x150mm
- Building-in hole 200mm



CSL 840 TIC

BUILT-IN SPEAKERS

ABS in-ceiling speaker with metal protection grille
- Colour white RAL9016
- Full range 2.5" dual cone,
- Nominal Power 1.5/3/6W with 100V/70V line transformer
- 120-20,000Hz frequency response
- 87dB+/- 3dB sensitivity @1W/1m
- Diameter 100x80mm
- Building-in hole 950mm



	CSL 106/T	CSL 520 TIC
Code	**29427**	**29416**
Rated/Maximum power	3/6W	2.5/5/10/20W/8ohm
Frequency response	100:20.000Hz	100:20.000Hz
Sensitivity 1W/1m	93dB	88dB
Input voltage	100V	100V
Cut-out diameter	150mm	170mm
Weight	0,5 Kg	1,8 Kg
Dimensions	ø 150x60mm	ø 203x145mm

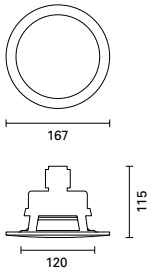
	CSL 630 TIC	CSL 840 TIC
Code	**29417**	**29418**
Rated/Maximum power	3.8/7.5/15/30W/8ohm	5/10/20/40W/8ohm
Frequency response	90:20.000Hz	50:20.000Hz
Sensitivity 1W/1m	88dB	88dB
Input voltage	100V	100V
Cut-out diameter	200mm	240mm
Weight	2,3 Kg	3,1 Kg
Dimensions	ø 230x150mm	ø 270x185mm

CSL 606 TWP

BUILT-IN SPEAKERS

ABS watertight (IP55) in-ceiling speaker

- Plastic printed cone, plastic basket and white RAL 9016 grille
- 5" loudspeaker with coaxial 1" tweeter, water-resistant and resistant to the corrosion due to outdoor mounting
- 70/100V integrated transformer
- Low impedance socket (8ohm)
- Maximum power 45W



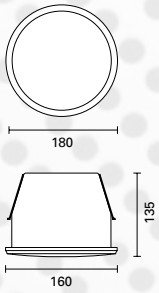
	CSL 606 TWP
Code	**29429**
Rated/Maximum power	25W/8ohm
Frequency response	95:20.000Hz
Sensitivity 1W/1m	90dB
Input voltage	100V
Cut-out diameter	122mm
Weight	0,7 Kg
Dimensions	ø 167x115mm

CSL 506 T/VA

BUILT-IN SPEAKERS

ABS in-ceiling speaker with steel framework

- White RAL9008 metal protection grille
- Steel flameproof base
- Ceramic connection terminal boards
- 150° thermal fuse
- Earthing screw and internal wiring
- Conform to BS5839 part 8 British Standard for loudspeakers in fire alarm systems
- 6/3/1.5/0.75 Watt 5" dual cone loudspeaker with 100V transformer



	CSL 506 T/VA
Code	**29433**
Rated/Maximum power	0,75/1,5/3/6W (100V)
Frequency response	110:15.000Hz
Sensitivity 1W/1m	92dB
Input voltage	100V
Cut-out diameter	160mm
Weight	0,9 Kg
Dimensions	ø 180x135mm

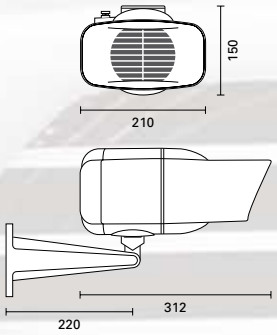
DP 10 T

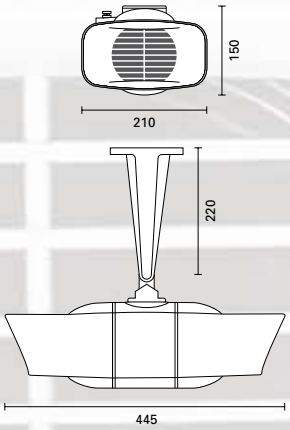
DPD 10 T

PLASTIC DNH SOUND PROJECTORS

DNH IP 55 rated sound projector
- Made in anticorrosion polyamide
- Wall or ceiling mounted articulated support
- 10 Watt power
- 100V line transformer
- Maximum/minimum operating temperature 150 C°/-40°C
- SPL 1W/1m 96dB
- Dispersion (-6dB) 1kHz/4kHz 110°/40°

DNH IP 55 rated sound projector
- Made in anticorrosion polyamide
- Articulated support
- Wall or ceiling mounted
- 10 Watt power
- 100 V line transformer
- Maximum/minimum operating temperature 150 C°/-40°C
- SPL 1W/1m 94dB
- Dispersion (-6dB) 1kHz/4kHz 110°/40° bidirectional



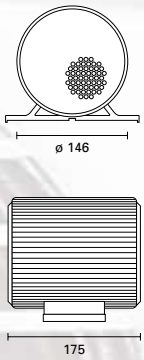


	DP 10 T	DPD 10 T
Code	**09352**	**11818**
Features	Watertight IP55	Watertight IP56 Bidirectional
Mounting system	Bracket	Bracket
Rated/Maximum power	10/15 Watt	10/15 Watt
Colour	Light grey RAL 7035	Light grey RAL 7035
Frequency response	150÷15.000 Hz	150÷15.000 Hz
Angular dispersion	110°/40°	110°/40° bidirectional
Sensitivity 1W/1m	96dB	94dB
Maximum SPL 1m	105dB	103dB
Input voltage	100 Volt	100 Volt
Operating temperature	da -40°C a 150°C	da -40°C a 150°C
Weight	2,7 Kg	3,7 Kg
Accessories of the kit	Bracket	Bracket
Dimensions (WxHxD)	210x150x312mm	210x150x445mm

CAR 6 FT

DNH FIRE RESISTANT SOUND PROJECTORS

DNH bi-directional loudspeaker
- Anodised aluminium or white
- NEMKO certified fire resistant at 150°C for 24 hours, at 750° for 30 minutes
- Power 6 Watt
- 100V transformer
- Max/min operating temperature 150 C°/-40°C
- SPL 1W/1m 92dB
- Dispersion (-6dB) 1kHz/4kHz 150°/150°



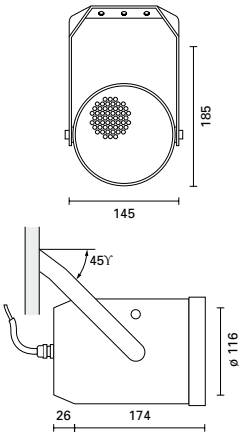
	CAR 6 FT
Code	**11956**
Features	Bi-directional fire-resistant with transformer
Mounting system	Bracket
Rated/Maximum power	6/8 Watt
Colour	Aluminium/anodised
Frequency response	150÷15.000Hz
Sensitivity 1W/1m	92dB
Maximum SPL 1m	99dB
Input voltage	100 Volt
Operating temperature	da -40°C a 150°C
Weight	2,2 Kg
Dimensions	ø 146x175mm

CAD 20 T

ABS SOUND PROJECTORS

ABS Sound projector watertight

- In-built UV protection IP55
- Aluminium U bracket
- Dual cone polypropylene speaker
- Power 20 Watt
- 100V transformer
- Max/min operating temperature 85 C°/-20°C
- SPL 1W/1m 92dB
- Dispersion (-10dB) 1kHz/4kHz 180°/70°



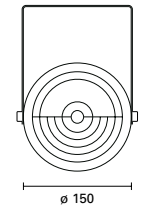
	CAD 20 T
Code	**11469**
Features	Dual cone loudspeaker with transformer
Mounting system	Stainless steel U bracket
Rated/Maximum power	20 Watt
Colour	White
Frequency response	110÷18.000 Hz
Sensitivity 1W/1m	92dB
Maximum SPL 1m	105dB
Input voltage	100/70 Volt
Operating temperature	da -20°C a 85°C
Weight	1,9 Kg
Dimensions	ø 138x200mm

SP 106 WP

ABS SOUND PROJECTORS

IP44 Weatherproof ABS sound projector

- Power 1.5/3/6W
- 50/70/100V transformer
- Complete with steel bracket
- 5.5" plastic loudspeaker
- Frequency response 150-20kHz
- Max/min operating temperature 85 C°/-20°C
- SPL@1W/1m 94dB
- Dispersion (-10dB) 1kHz/4kHz 150°/50°



	SP 106 WP
Code	**15810**
Features	IP44 Weatherproof sound projector
Mounting system	Stainless steel U bracket
Rated/Maximum/Power	6 Watt, 3 Watt, 1,5 Watt
Colour	White
Frequency response	150-20 kHz
Sensitivity 1W/1m	94dB
Maximum SPL 1m	101dB
Input voltage	100/70/50 Volt
Operating temperature	da 85°C a -20°C
Weight	2,2 Kg
Dimensions	ø 150x196,5mm

SP 106 B/WP

ABS SOUND PROJECTORS

IP44 Weatherproof ABS sound projector

- Power 1.5/3/6W
- 50/70/100V transformer
- Complete with stainless steel bracket
- 5.5" plastic loudspeaker
- Frequency response 150-20kHz
- Max/min operating temperature 85 C°/-20°C
- SPL@1W/1m 94dB
- Dispersion (-10dB) 1kHz/4kHz 150°/50°

	SP 106 B/WP
Code	**18069**
Features	Bi-directional IP44 Weatherproof sound projector
Mounting system	Stainless steel U bracket
Rated/Maximum/Power	6 Watt, 3 Watt, 1,5 Watt
Colour	White
Frequency response	150-20 kHz
Sensitivity 1W/1m	94dB
Maximum SPL 1m	101dB
Input voltage	100/70/50 Volt
Operating temperature	da 85°C a -20°C
Weight	2,2 Kg
Dimensions	ø 150x196,5mm

CESL 10T

CESL 20T

CESL 10T BIDI

ALUMINIUM SOUND PROJECTORS

Watertight (IP55) sound projector
- White RAL9016 painted aluminium
- Polypropylene dual cone loudspeaker
- 10/5/2.5/1.25 Watt power
- 100V Transformer
- Maximum/ minimum operating temperature 85 C°/-20 C°
- SPL 1W/1m 91dB
- Dispersion (-10dB) 1kHz/8kHz 150°/50°

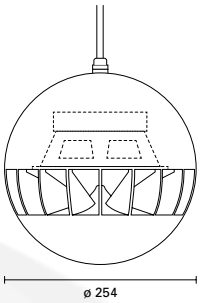
Watertight (IP55) sound projector
- White RAL9016 painted aluminium
- Polypropylene dual cone loudspeaker
- 20/10/5Watt power
- 100V Transformer
- Maximum/ minimum operating temperature 85 C°/-20 C°
- SPL 1W/1m 92dB
- Dispersion (-10dB) 1kHz/8kHz 150°/50°

Watertight (IP55) sound projector
- White RAL9016 painted aluminium
- Polypropylene dual cone loudspeaker
- 10/5/2.5 Watt power
- 100V Transformer
- Maximum/ minimum operating temperature 85 C°/-20 C°
- SPL 97dB@100V 5W
- Dispersion (-6dB) 1kHz/160° 110°/40° for each direction

	CESL 10T	CESL 20T	CESL 10T-BIDI
Code	**29420**	**29421**	**29429**
Rated/Maximum power	10/5/2,5/1,25W	20/10/5W	10/5/2,5W
Frequency response	130Hz:15.000Hz	110Hz:15.000Hz	130Hz:15.000Hz
Sensitivity 1W/1m	91dB	92dB	91dB
Input voltage	100V	100V	100V
Weight	2,2 Kg	2,8 Kg	2,8 Kg
Dimensions	ø 138x205mm	ø 170x252mm	ø 138x205mm

GB 820/T

SPHERICAL SPEAKER

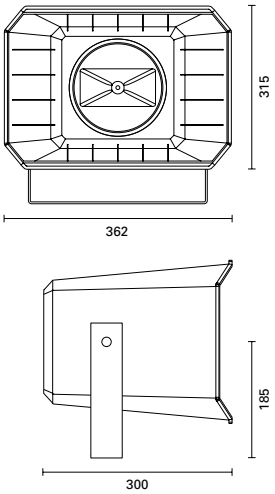


ABS IP55-rated spherical speaker to be mounted on the ceiling, ideal for large area coverage
- Coaxial 8" speaker playing both voice and music, extremely clear voice play
- 360° horizontal and 140° vertical dispersion
- 20 Watt power
- 100V Transformer
- Equipped with 5 m cable

	GB 820/T
Code	**29430**
Rated/Maximum power	20W/10W/5W
Frequency response	160Hz:12.500Hz
Sensitivity 1W/1m	93dB
Maximum SPL 1m	106dB
Input voltage	100V
Weight	2,2 Kg
Dimensions	ø 254mm

MHS 50T

MUSIC HORN



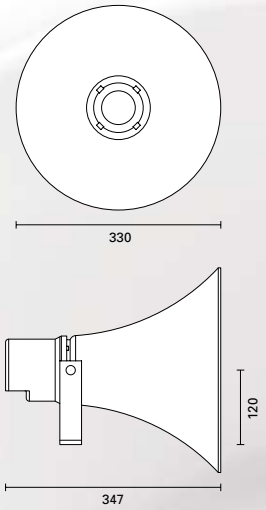
ABS and polypropylene watertight (IP66) two-way DNH music horn

- Wide frequency-response and wide dispersion angle
- Stainless steel adjustable bracket, ABS light grey body treated to be resistant to sunlight
- Sealed with silicone gasket
- 50Watt power with 100V transformer

	MHS 50T
Code	**29431**
Rated/Maximum power	50W
Colour	Light Grey RAL 7035
Frequency response	90-20.000Hz
Sensitivity 1W/1m	99dB
Weight	3,9 Kg
Dimensions (WxHxD)	362x315x300mm

HS 50T

HORN



ABS watertight (IP66) two-way music horn

- 100V line transformer and driver
- High-pass filter for driver protection, suitable for internal and external environments with temperature between -25°C e +70°C
- Colour white RAL7035
- Stainless steel bracket
- Double insulation

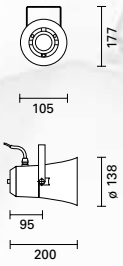
	HS 50T
Code	**29422**
Rated/Maximum power	50W
Colour	Light Gray RAL 7035
Frequency response	380-6.500Hz
Sensitivity 1W/1m	109dB
Maximum SPL 1m	126dB
Input voltage	100Volt
Operating temperature	from 85°C to -20°C
Weight	2,3 Kg
Dimensions	ø 330x347mm

PH 10 T

ABS HORN LOUDSPEAKERS

IP 66 weatherproof circular horn loudspeaker in ABS

- RAL 7035 light grey colour
- Stainless steel U bracket
- Power 10/5/2,5/1,25 Watt
- 100V transformer
- Max/min operating temperature 85 C°/-20°C
- SPL 1W/1m 106dB
- Dispersion (-10dB) 1kHz/4kHz 180°/70°

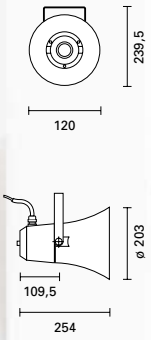


PH 20 T

ABS HORN LOUDSPEAKERS

IP 66 weatherproof circular horn loudspeaker in ABS

- RAL 7035 light grey colour
- Stainless steel U bracket
- Power 10/5/2,5/2.5 Watt
- 100V transformer
- Max/min operating temperature 85 C°/-20°C
- SPL 1W/1m 108dB
- Dispersion (-10dB) 1kHz/4kHz 180°/60°



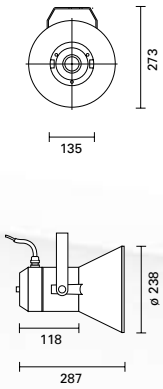
	PH 10 T	PH 20 T
Code	**11474**	**11475**
Features	Plastic, weatherproof and UV protection with transformer	Plastic, weatherproof and UV protection with transformer
Mounting system	U Bracket	U Bracket
Rated/Maximum power	10 Watt	20 Watt
Colour	Light Grey RAL 7035	Light Grey RAL 7035
Frequency response	400÷8.000 KHz	350÷8.000 KHz
Sensitivity 1W/1m	106dB	108dB
Maximum SPL 1m	116dB	121dB
Input voltage	100/70 Volt	100/70 Volt
Operating temperature	da -20°C a 85°C	da -20°C a 85°C
Weight	1,3 Kg	1,9 Kg
Dimensions	ø 138x200mm	ø 203x254mm

PH 30 T

ABS HORN LOUDSPEAKERS

IP 66 weatherproof circular horn loudspeaker in ABS

- RAL 7035 light grey colour
- Stainless steel U bracket
- Power 30/15/7.5/3.75 Watt
- 100V transformer
- SPL 1W/1m 110dB
- Dispersion (-10dB) 1kHz/4kHz 180°/60°



	PH 30 T
Code	**10446**
Features	Plastic, weatherproof and UV protection with transformer
Mounting system	U Bracket
Rated/Maximum power	30 Watt
Colour	Light Grey RAL 7035
Frequency response	330÷8.000 KHz
Sensitivity 1W/1m	110dB
Maximum SPL 1m	124dB
Input voltage	100/70 Volt
Operating temperature	da -20°C a 85°C
Weight	2,1 Kg
Dimensions	ø 238x287mm

FBT Audio Contractor

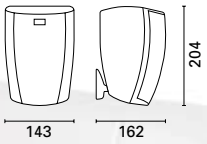
LOUDSPEAKER CABINETS
COLUMN SPEAKERS
OUTDOOR SPEAKERS
ATTENUATORS
MEGAPHONES

Sound Design Project
for Pasaron Stadium
Pontevedra - Spagna

PROJECT

PROJECT 315 PROJECT 320

LOUDSPEAKER CABINETS



Grey RAL 7035 or black RAL 9005 ABS loudspeaker

- Bracket included
- 2 way bass reflex
- 3.5" woofer and 0.5" tweeter
- 100V line transformer (Multi Tapp)
- Frequency response @-10dB is 100Hz-15kHz
- Dispersion HxV 120°x120°
- High-pass filter recommended 70Hz-24dB/oct
- 8-piece multiple packing
- 15W/30W nominal/maximum power
- Setting 2/4/7.5/15W/8ohm
- Sensitivity 85dB
- Max SPL 100dB

Grey RAL 7035 or black RAL 9005 ABS loudspeaker

It has the same characteristics as the 315 version, with the following features:

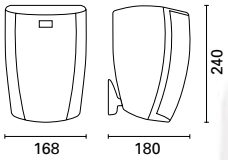
- 20W/40W nominal/maximum power
- Setting 4/8/15/20W/8ohm
- Sensitivity 87dB
- Max SPL 103Db

Project 315 WT
Project 320 WT

Project 315 BT
Project 320 BT

Wall bracket manufactured from die-cast aluminium with ball/socket multi angle adjustment capability and steel security cable.

	Project 315 BT / WT	Project 320 BT / WT
Code	**29350 / 29349**	**29221 / 29220**
Configuration	2 way	2 way
Recommended amplifier	30W rms	40W rms
Long term power	15W	20W
Short term power	60W	80W
Line transformer (100V)	1-2-4-7,5-15W	4-8-15-20W
Nominal impedance	8ohm	8ohm
Frequency response @-10dB	100Hz-15kHz	100Hz-20kHz
Low frequency woofer	88mm	88mm
Tweeter	13mm	13mm
Sensitivity (@1W,1m)	85dB	87dB
Max. Spl	100dB	103dB
Dispersion	120x120 HxV	120x120 HxV
Recommended hp filter	70Hz-24dB/oct	70Hz-24dB/oct
Input connector	Euroblock	Euroblock
Dimensions (WxHxD)	143x204x162mm	143x204x162mm



Grey RAL 7035 or black RAL 9005 ABS loudspeaker

- Bracket included
- Grey or black ABS loudspeaker
- 2 way bass reflex
- 5" woofer and 0.75" tweeter
- 100V line transformer(Multi Tapp)
- Frequency response @-10dB 85Hz-20kHz
- Dispersion HxV 100°x100°
- High-pass filter recommended 55Hz-24dB/oct
- 30W/60W nominal/maximum power
- Setting 10/15/20/30W/8ohm
- Sensitivity 87.5dB
- Max SPL 106dB

Grey RAL 7035 or black RAL 9005 ABS loudspeaker

It has the same characteristics as the 530 version, with the following differing features:

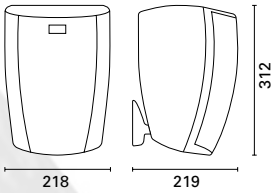
- 50W/100W nominal/maximum power
- Setting: 15/25/40/50W/8ohm
- Sensitivity 89dB
- Max SPL 109Db

Project 530 WT
Project 530 WT

Project 550 BT
Project 550 BT

Wall bracket manufactured from die-cast aluminium with ball/socket multi angle adjustment capability and steel security cable.

	Project 530 BT / WT	Project 550 BT / WT
Code	**29223 / 29222**	**29225 / 29224**
Configuration	2 way	2 way
Recommended amplifier	60W rms	100W rms
Long term power	30W	50W
Short term power	120W	200W
Line transformer (100V)	10-15-20-30W	15-25-40-50W
Nominal impedance	8ohm	8ohm
Frequency response @-10dB	85Hz-20kHz	80Hz-20kHz
Low frequency woofer	130mm	130mm
Tweeter	20mm	25mm
Sensitivity (@1W,1m)	87,5dB	89dB
Max. Spl	106dB	109dB
Dispersion	100x100 HxV	100x100 HxV
Recommended hp filter	55Hz-24dB/oct	50Hz-24dB/oct
Input connector	Euroblock	Euroblock
Dimensions (WxHxD)	168x240x180mm	168x240x180mm



Grey RAL 7035 or black RAL 9005
ABS loudspeaker

- Bracket included
- 2 way bass reflex
- 6.5" woofer and 1" tweeter
- 100V line transformer(multi Tapp)
- Frequency response @-10dB 70Hz-20kHz
- Dispersion HxV 90°x90°
- High-pass filter recommended 40Hz-24dB/oct
- 4-piece multiple packing
- 40W/80W nominal/maximum power
- Setting 10/20/30/40/8ohm
- Sensitivity 89dB
- Max SPL 108dB

Grey RAL 7035 or black RAL 9005
ABS loudspeaker

It has the same characteristics as the 640 version, with the following differing features:

- 60W/120W nominal/maximum power
- Setting 15/30/45/60W/8ohm
- Sensitivity 90dB
- Max SPL 111dB

Project 640 WT
Project 660 WT

Project 640 BT
Project 660 BT

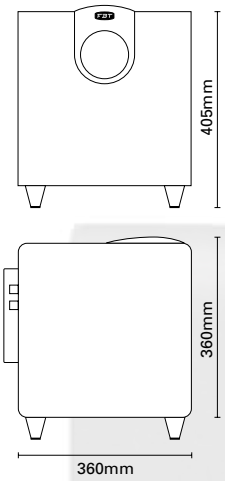
Wall bracket manufactured from die-cast aluminium with ball/socket multi angle adjustment capability and steel security cable.

	Project 640 BT / WT	Project 660 BT / WT
Code	**29227 / 29226**	**29229 / 29228**
Configuration	2 way	2 way
Recommended amplifier	80W rms	120W rms
Long term power	40W	60W
Short term power	160W	240W
Line transformer (100V)	10-20-30-40W	15-30-45-60W
Nominal impedance	8ohm	8ohm
Frequency response @-10dB	70Hz-20kHz	70Hz-20kHz
Low frequency woofer	165mm	165mm
Tweeter	25mm	25mm
Sensitivity (@1W,1m)	89dB	90dB
Max. Spl	108dB	111dB
Dispersion	90x90 HxV	90x90 HxV
Recommended hp filter	40Hz-24dB/oct	40Hz-24dB/oct
Input connector	Euroblock	Euroblock
Dimensions (WxHxD)	218x312x219mm	218x312x219mm

PROJECT Sub 1180A

AMPLIFIED SUBWOOFER

PROJECT



Amplified subwoofer

- Black or grey colour wooden construction
- 1 way bass reflex
- 180W rms internal amplifier
- 4 ohm nominal impedance
- Frequency response @-10dB 28Hz-180Hz
- Sensitivity 90dB
- Max SPL 112dB
- Dispersion HxV omnidirectional
- RCA input and output connector
- Crossover frequency and volume control

	Project Sub 1180A
Code	**29351**
Configuration	1 way
Internal amplifier	180W rms
Frequency response @-10dB	28Hz-180kHz
Low frequency woofer	250mm
Sensitivity (@1W,1m)	90dB
Max. Spl	112dB
Dispersion	omnidirectional
Input connector	2 x RCA
Power consumption	200Va
Dimensions (WxHxD)	360x450x360mm

STYLE A40 STYLE P80 STYLE S80

LOUDSPEAKER CABINETS

The new series of STYLE sound speakers combines high quality sound play with innovative design, creating a new concept and a catching look that are able to satisfy several architectural needs.
The sound speaker shall no more be hidden, with the risk of affecting the sound quality. Instead, it will be integrated in the environment, combining form and function, acoustics and integration in the environment.
The nature itself has inspired this loudspeaker: in the nature the sound spreads to all directions, and, hence, we have developed a speaker that could reproduce a natural sound feeling. The sound diffusion in the nature is 360°, whereas in standard speakers its propagation is conic-shaped and, hence, has a narrow angle.
Thanks to the conic-shape of the diaphragm, STYLE sound speakers provide a 360° sound diffusion, reaching even the highest frequencies. The sound diffusion spreads to all directions, keeping the sound natural and accurate even when the volume is very high.
Thanks to this new technology you will immediately forget the geometric diffusion you are used to and you will be able to recreate a holographic and three-dimensional sound effect in any environment.
Moreover, thanks to the material Style speakers are made of and to the aluminium loudspeaker, they are suitable for outdoor mounting and resist to various weather conditions.

- 360° even sound diffusion
- Even sound diffusion over a wide frequency range (120 Hz ÷ 20KHz) to all directions
- They can be powered using standard amplifiers
- The listening position is not bound by the orientation towards the axis
- Perfect both for high-fidelity systems and for sound diffusion in environments such as train stations, airports, restaurants, shopping centres etc.
- Full end even sound energy pressure everywhere in the environment
- High sound efficiency
- Excellent results with reference to the Larsen effect thanks to the sound energy that is reduced to one fourth towards the microphone
- Low intermodulation
- Low second harmonic distortion
- Classic modern design, perfect for any environment

STYLE A40

STYLE P80

STYLE S80

Customization is possible upon request

TR-20 Switching unit

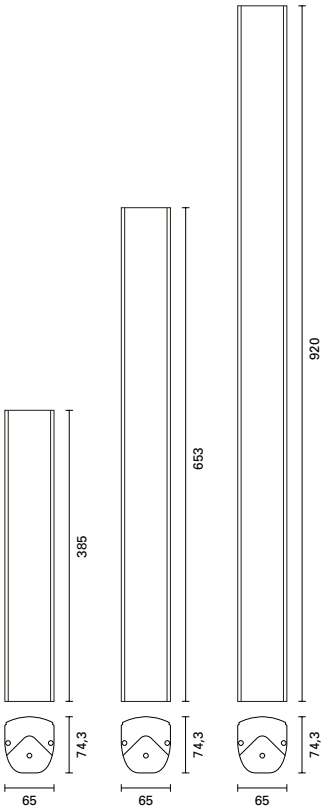
Cod. 31011

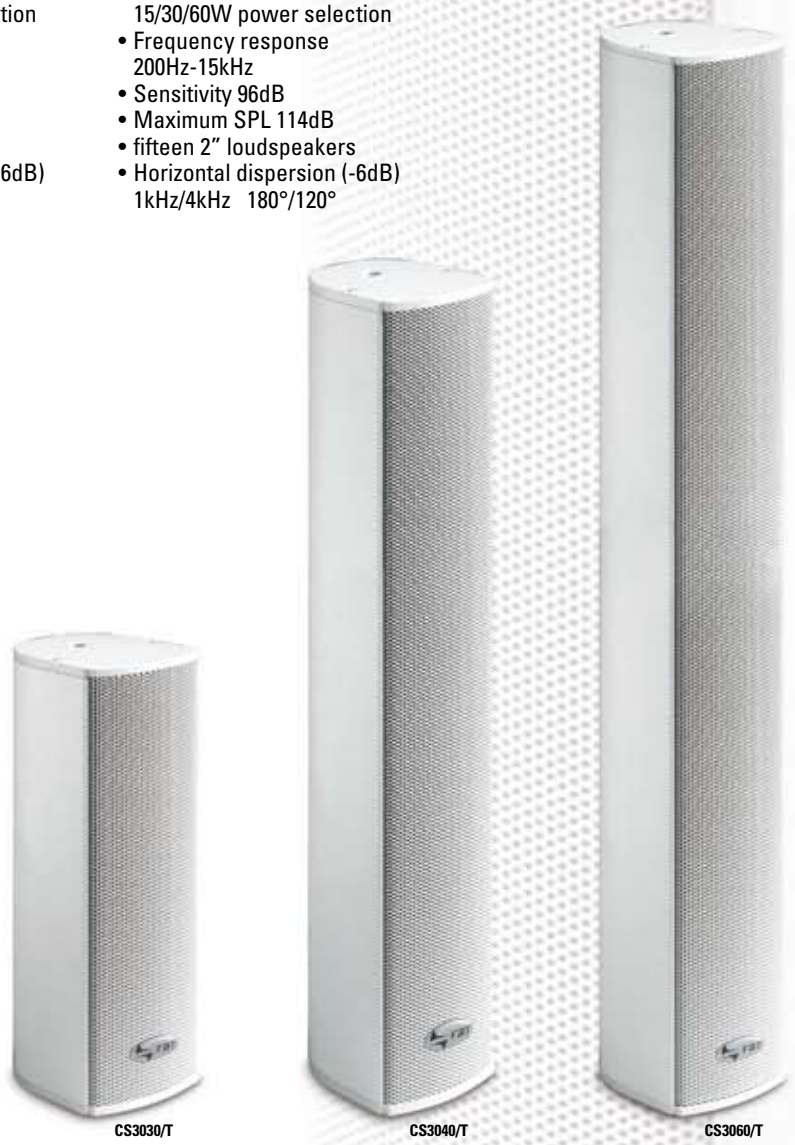
	STYLE A40	STYLE P80	STYLE S80
Code	**31150**	**31151**	**31152**
Type	Ceiling mounted	Suspending mounted	Wall hanging speaker
System	One way system	One way system	One way system
Enclosure	Palstic flange (Duroplast)	Plastic flange (Duroplast)	Plastic material (PC+ABS+Duroplast Fenol)
Colour	White RAL 9010 matte	White RAL 9010 matte	White RAL 9010 matte
Driver equipment	1x FDS 100/40 ALU Sonus/NewTec	1 x FDS 100/40 ALU Sonus/NewTec	1x FDS 100/40 ALU Sonus/NewTec
Nom. Imp. / DC Widerstand	8Ω / 6,2Ω	8Ω / 6,2Ω	8Ω / 6,2Ω
Nominal / Music Power	40 Watt RMS / 90 Watt Music power	80 Watt / 165 Watt	80 Watt / 165 Watt
Sensitivity (1W@1m 2,83V@1m)	86,4dB (+6dB auf 360°)	86,4dB (+6dB auf 360°)	86,4dB (+6dB auf 360°)
Maximum SPL	104dB (active high pass 120Hz/18dB - Oktave)	104dB (active high pass 120 Hz / 18dB - Oktave)	104dB (active high pass 120 Hz / 18dB - Oktave)
Frequency response	105 - 20.000 Hz (+/-3dB)	105 - 20.000 Hz (+/-3dB)	100 - 20.000 Hz (+/-3dB)
Connectors	Press-Terminal	Press-Terminal	Screw-terminal
Net weight (only the loutspeaker)	470gr	830gr	1160gr
Gross weight (inc. Package)	720gr	1170gr	1530gr
Dimensions	ø 180x15mm installation depth 35mm	ø 134x135mm + cab. stand. lenght 1mt - Deckendose (Baldachin) Höhe 72mm, ø60	ø 134x130x220mm
Accessories	**TR-20 Code 31011** Deckendose (Baldachin) Höhe 100Volt / 2000Ω - 250Ω	**TR-20 Code 31011** transformer 5 pole print-terminal 100Volt / 2000Ω - 250Ω	**TR-20 Code 31011** transformer 5 pole print-terminal 100Volt / 2000Ω - 250Ω
Nominal Power 100V	2,5-5-10-20 Watt	2,5-5-10-20 Watt	2,5-5-10-20 Watt
Maximum SPL 100V	101,5dB	101,5dB	101,5dB

Column speaker with aluminium body
- Power 30 Watt RMS with 70-100V transformer and 7.5/15/30W power selection
- Frequency response 200Hz-16kHz
- Sensitivity 91dB
- Maximum SPL 106dB
- five 2" loudspeakers
- Horizontal dispersion (-6dB) 1kHz/4kHz 180°/120°

Column speaker with aluminium body
- Power 40 Watt RMS with 70-100V transformer and 10/20/40W power selection
- Frequency response 200Hz-16kHz
- Sensitivity 94dB
- Maximum SPL 110dB
- ten 2" loudspeakers
- Horizontal dispersion (-6dB) 1kHz/4kHz 180°/120°

Column speaker with aluminium body
- Power 60 Watt RMS with 70-100V transformer and 15/30/60W power selection
- Frequency response 200Hz-15kHz
- Sensitivity 96dB
- Maximum SPL 114dB
- fifteen 2" loudspeakers
- Horizontal dispersion (-6dB) 1kHz/4kHz 180°/120°




CS3030/T CS3040/T CS3060/T

SC A2 **Wall fastening bracket**

Code 20130

	CS 3030/T	CS 3040/T	CS 3060/T
Code	**20128**	**20131**	**20129**
Power (R.M.S.)	7,5-15-30W - 100V	10-20-40W - 100V	15-30-60W - 100V
Sensitivity 1W/1m	91dB	94dB	96dB
Frequency response (± 6dB)	200÷16.000Hz	200 ÷ 16.000Hz	200 ÷ 15.000Hz
Loudspeakers	N° 5 x 2"	N° 10 x 2"	N° 15 x 2"
Cabinet	Aluminium	Aluminium	Aluminium
Weight	1,94 Kg	3,4 Kg	4,63 Kg
Dimensions (WxHxD)	65x385x74,3mm	65x653x74,3mm	65x920x74,3mm

Loudspeaker cabinets
- Extremely light and sturdy enclosure made of gas injection moulded polypropylene, black (STUDIO. PRO 9B) or RAL 7035 grey colour (STUDIO.PRO 9W), stand adapter, 2 M6 anchoring points
- 2-way bass-reflex system with 130mm woofer and 25mm high frequency tweeter
- Power 120 Watt
- Frequency response 80Hz-20 kHz
- Sensitivity 95.5dB 1W/1m Maximum SPL 116.5dB
- Dispersion (HxV) 90°x60°
- SUB-D input connectors

Speaker cabinets
Same characteristics as the STUDIO.PRO 9B/W models except for the following:
- Power 80W
- 70-100V 4-position line transformers: 5W/20W/45W/80W
- Sensitivity 95.5dB 1W/1m Maximum SPL 114.5dB

Loudspeaker cabinet
Same characteristics as the STUDIO. PRO 9B/W models except for the following:
- 80W RMS internal amplifiers for the woofer and 20W RMS for the driver
- ADAP® (Advanced Dynamic Active Protection) designed to limit amplifier saturation and ensure complete reliability of the system even in extreme conditions; 24dB/ oct active filters
- Frequency response 70Hz-20 kHz
- Sensitivity 95dB 1W/1m
- Maximum SPL 115dB
- Control panel with Ground Lift, Combo XLR/JACK inputs, XLR male output, limiter, volume control

SJ 9 B/W — Adjustable wall support

Model	Code	Colour
SJ 9 B	19706	black
SJ 9 W	19705	RAL 7035 grey

SJ 9 UB/UW — Wall mounting brackets

Model	Code	Colour
SJ 9 UB	19708	black
SJ 9 UW	19707	RAL 7035 grey

ST 20 B — Adjustable floor stand

Code 19710
Adjustable metal floor stand, with safety locking device, max weigh 55 kg

	STUDIO.PRO 9 B/W	STUDIO.PRO 9 BT/WT	STUDIO.PRO 9 BA
Code	**19678 / 19677**	**19680 / 19679**	**19681**
Colour	black - RAL 7035 grey	black - RAL 7035 grey	black
Configuration	2 way	2 way	2 way
Recommended amplifier	120W rms	80W rms	-
Internal amplifier	-	-	80W + 20W
Long term power (AES)	60W	-	-
Short term power (IEC 268-5)	240W	-	-
Nominal impedance	8ohm	-	-
Line transformer	-	70V-100V	-
Frequency response (@-6dB)	80Hz - 20kHz	80Hz - 20kHz	70Hz - 20kHz
Low frequency woofer	1x200 ø 38 mm coil	1x200 ø 38 mm coil	1x200 ø 38 mm coil
High frequency woofer	1xTweeter+horn ø 20 mm coil	1xTweeter+horn ø 20 mm coil	1xTweeter+horn ø 20 mm coil
Sensitivity 1W/1m	95,5dB	95,5dB	95dB
Max. SPL 1m	116,5dB	114,5dB	115dB
Dispersion	90°x60° HxV	90°x60° HxV	90°x60° HxV
Crossover frequency	3,5 kHz	3,5 kHz	2,5 kHz
Recommended hp filter	60Hz 24dB oct	60Hz 24dB oct	-
Input connectors	spring terminals	spring terminals	Combo XLR-M/JACK
Weight	4,8 kg	4,8 kg	5,4 Kg
Dimensions (WxHxD)	255x415x245mm	255x415x245mm	255x415x245mm

Loudspeaker cabinet
- Extremely light and sturdy enclosure made of gas injection moulded polypropylene, black colour, integral handle
- Stand adapter, 2 M6 anchoring points
- 2-way bass-reflex system with 320mm woofer and 25mm high frequency tweeter
- Built-in class G amplifiers 150W RMS for the woofer and 50W RMS for the high frequency unit; ADAP (Advance Dynamic Active Protection) designed to limit amplifier saturation and ensure complete reliability of the system even in extreme conditions (STUDIO.PRO 14BA)
- 24dB/oct active filters (STUDIO.PRO 14BA)
- Power 250 Watt
- Impedance 8 Ohm
- Frequency response 60Hz-20 kHz
- Sensitivity 98dB 1W/1m
- Maximum SPL 122/125dB (STUDIO.PRO 14B) 121dB (STUDIO.PRO 14BA)
- Dispersion (HxV) 90°x60°
- 2 speakon input connectors
- Control panel with Ground Lift switch, Combo XLR/JACK inputs, XLR male output, limiter, volume control (STUDIO.PRO 14BA)

SJ 14 UB — Wall mounting brackets

Model	Code	Colour
SJ 14 UB	19709	black

ST 30 B — Adjustable floor stand

Code 18239
Adjustable, aluminium floor stand, with safety locking device

ST 40 B — Adjustable floor stand

Code 18240
Adjustable, metal floor stand, with safety locking device

	STUDIO.PRO 14B	STUDIO.PRO 14BA
Code	**19682**	**19683**
Configuration	2 way	2 way
Recommended amplifier	250W rms	-
Internal amplifier	-	150W+50W rms
Long term power (AES)	125W	-
Short term power (IEC 268-5)	500W	-
Nominal impedance	8ohm	-
Frequency response (@-6dB)	60Hz - 20kHz	60Hz - 20kHz
Low frequency woofer	1x320 ø 51 mm coil	1x320 ø 51 mm coil
High frequency woofer	1x25.4+horn ø 25.4 mm coil	1x25.4+horn ø 25.4 mm coil
Sensitivity 1W/1m	98dB	98dB
Maximum SPL 1m	122/125dB	121dB
Dispersion	90°x60° HxV	90°x60° HxV
Crossover frequency	2,5 kHz	2 kHz
Recommended hp filter	40Hz 24dB oct	40Hz 24dB oct
Input connectors	2xspeakon	Combo XLR/JACK
Weight	13,5 kg	16 kg
Dimensions (WxHxD)	410x663x387mm	410x663x387mm

MD60 B

- Durable UV stable ABS plastic cabinet
- Wide frequency range, high efficiency two-way system with ingress protected bass reflex port
- Weather-proof to IP 44
- Standard colours black or white
- Available in 8 ohm or 100V line versions MD-60 is available with transformer on request: 70/50 Volt line

MD60 BT

- Secondary switch tappings:
  1/1 60,0 W
  1/2 30,0 W
  1/4 15,0 W
  1/8 7,5 W
  1/16 3,5 W

MD40

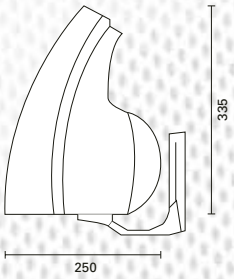
Extremely light and solid ABS sound speaker

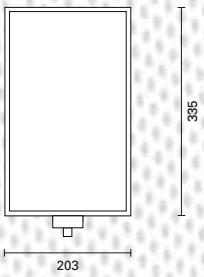
- 2 way bass reflex system
- 40W/80W nominal/maximum power
- 60Hz-20 kHz frequency response
- Sensitivity 87 dB 1W/1m
- Maximum sound pressure 103 dB, Max/Min 90°C/20°C
- Terminal board connectors
- Protection index IP44
- Size (WxHxD) 155x240x226
- Weight 2.6 Kg
- Stainless steel fixing bracket

MD40 T

Extremely light and solid ABS sound speaker

- Same characteristics as the MD40 model
- 100V

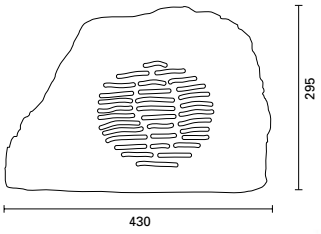




	MD 60 B/W	MD 60 BT/WT	MD 40 B/W	MD40 BT/WT
Code	**23727/21648**	**23376/23119**	**29462/29307**	**29131**
Material / Colour	ABS / Black or White		ABS / Black or White	
Mounting	Bracket (included)		Bracket (included)	
Terminazioni	screw terminal		screw terminal	
IP-rating	44		44	
Max. / min. amb. temp	90°C / -20°C		90°C / -40°C	
Standard version	8 Ω		8 Ω	
Power (Rated/Max.)	60W/100W		40W/60W	
SPL 1W/1m	90dB		87dB	
SPL 100 W/1m	109dB		103dB	
Frequency response	45-20.000 Hz		60-20.000 Hz	
Dispersion (-6dB) 1 kHz / 4 kHz	110° / 55°		-	
Directivity factor, Q (2 kHz	6,4		-	
Weight	2,9 kg		2,6 kg	
Dimensions (WxHxD)	203x335x250mm		203x335x250mm	

GDS 200T/DT

EXTERNAL SOUND SPEAKERS



IP55 external sound speaker

- Dual cone two way loudspeaker
- Polyurethane framework
- 8" diameter
- Stainless steel basket
- Polypropylene diaphragm
- Rubber suspension
- ø 25,5mm coil
- ø 100mm coil ferrite magnet
- 8 ohm impedance
- 150W maximum peak power
- 75W Rms active power
- 40 Hz - 18.000 Hz passband
- 90dB +/- 2dB sensitivity (1W/1m)
- Size 430x295x300mm
- Weight 3.6 kg

	GDS 200T/DT
Code	**20010**
System	2 way dual cone
IP-rating	55
Maximum power	150W
Active power	75W rms
Constant voltage	100 V
Banda passante	40-18.000Hz
SPL Sensitivity	90 +/- 2dB (1W/1m)
Dimensions (WxHxD)	430x295x300mm
Weight	3,6 kg

GS 20/T

EXTERNAL SOUND SPEAKERS

IP66 external sound speaker

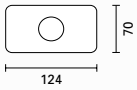
- Guaranteed to resist to difficult weather conditions
- It can be placed near pools, on terraces or in gardens
- This versatile speaker can be mounted on the surface or underground
- Speaker's base has been designed to guarantee a firm and safe positioning
- Offers extraordinary coverage thanks to its design, enabling a 360° sound dispersion
- 80Hz-15,000Hz frequency response
- 95dB+/-3dB sensitivity
- 100V Transformer
- 4" Woofer
- ABS, green coloured
- Diameter 215x245mm
- Net weight 2.04Kg

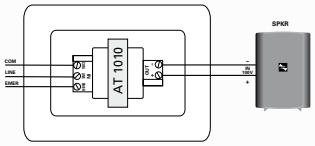
	GS 20/T
Code	**29432**
System	2 way dual cone
IP-rating	66
Maximum power	150W
Active power	20W
Sensitivity	95dB+/-3dB
Transformer	100V
Woofer	4"
Colour	Green in ABS
Dimensions	ø 215x245mm
Weight	2,04 kg

ATT 1010

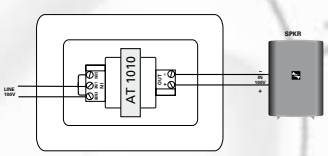
ATTENUATORS

Recessed attenuator
- 100V 10 Watt transformer (for A 503 surface mounting recess)
- Designed for emergency systems in installations with 3 wires





Connection with 100V line and emergency

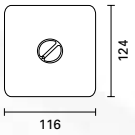


Connection with 100V line

ATT 0501

ATTENUATORS

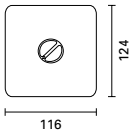
Recessed attenuator
- 100V 50 Watt Transformer, including cover
- Designed for emergency systems in installations with 3 wires

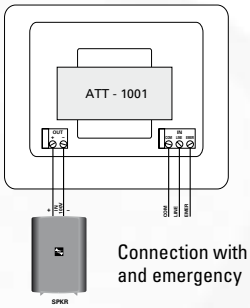


ATT 1001

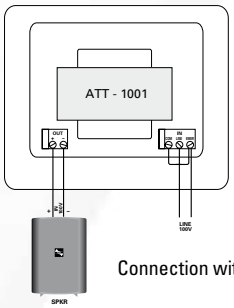
ATTENUATORS

Recessed attenuator
- 100V 100 Watt transformer, including cover
- Designed for emergency systems in installations with 3 wires





Connection with 100V line and emergency



Connection with 100V line

SUB 1000

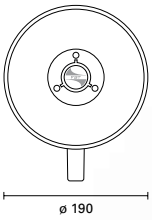
Recess box

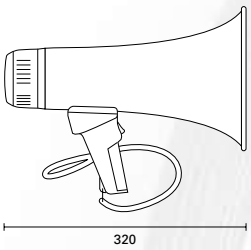
Code 13542
For ATT 0501 and ATT 1001 attenuators

	AT 1010	ATT 0501	ATT 1001
Code	**13000**	**17902**	**13001**
Features	Surface mounted attenuator with transformer and Emergency	Surface mounted attenuator with transformer and Emergency	Surface mounted attenuator with transformer and Emergency
Mounting system		SUB 1000 surface mounting recess not supplied	SUB 1000 surface mounting recess not supplied
Rated power	10 Watt	50 Watt	100 Watt
Controls	11 posizioni +OFF	11 posizioni +OFF	11 posizioni +OFF
Total attenuation	36dB	36dB	36dB
Input voltage	100V	100V	100V
Output voltage	0-100V	0-100V	0-100V
Accessories included	White ABS plate	White ABS plate	White ABS plate
Optional accessories		Surface mounting	Surface mounting
Weight	160 g	450 g	700g
Dimensions (WxHxD)	124x70x42,5mm	116x124x60mm	116x124x60mm
Maximum protrusion	10,6mm	10,6mm	10,6mm

MG 10

MEGAPHONES





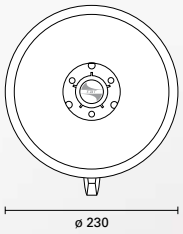
Megaphone

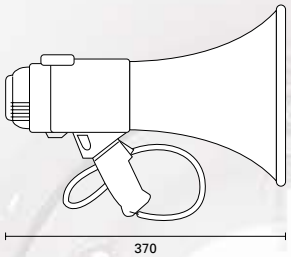
- 10 Watt Power with up to 0.5 km range depending on ambient noise levels
- DC 12V power supply
- 8 x 1.5V batteries (AA - UM 3)

	MG 10
Code	**11584**
Features	Megaphone
Rated/Maximum power	10 W
Frequency response	30÷5000 Hz
Capacity	500:800 m depending on ambient noise levels
Power supply	12 VDC 8 x 1.5V" AA" (UM 3) batteries
Weight	0,9 Kg
Dimensions	ø 190x320mm

MG 25

MEGAFONI





Megaphone

- 25 Watt power with up to 1 km range depending on ambient noise levels
- DC 12V power supply
- 8 x 1.5V batteries (AA - UM 3)

	MG 25
Code	**11585**
Features	Megaphone
Rated/Maximum power	25 W
Frequency response	280÷6000 Hz
Capacity	500:800 m depending on ambient noise levels
Power supply	12 VDC 8 x 1.5V" AA" (UM 3) batteries
Weight	1,65 Kg
Dimensions	ø 230x370mm

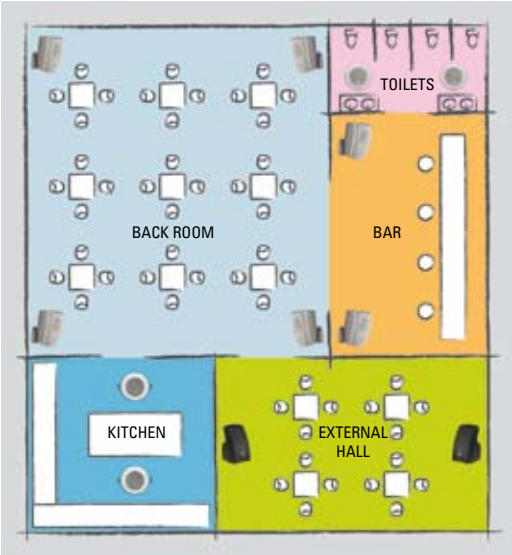
Brunswick
Brunswick

FBT Audio Contractor

SYSTEMS

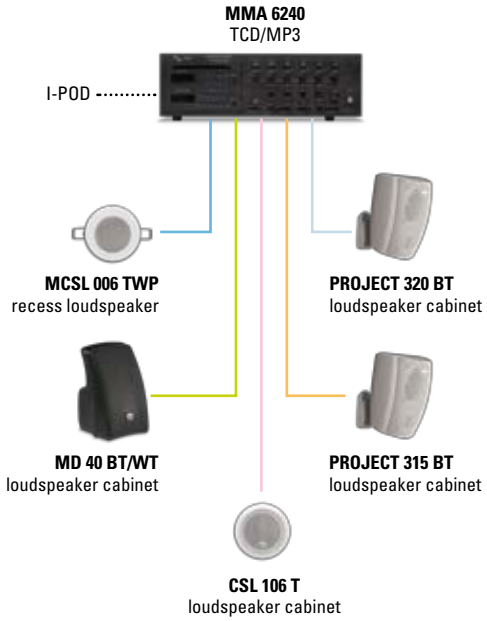
Sound Design Project
for Bowling Alley in Corfù

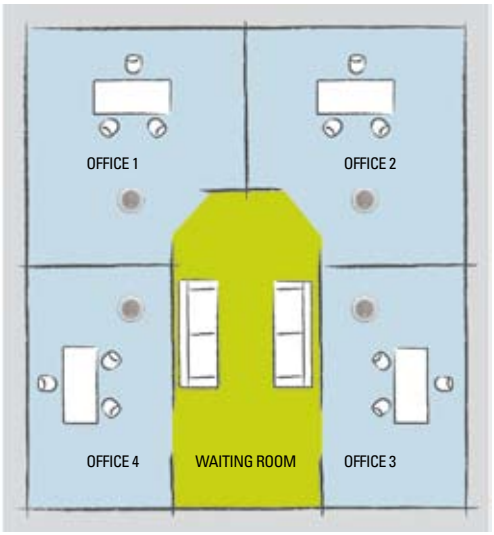
- ***Settings:***
  Range of communal halls and areas dedicated to specific activities including a swimming pool, bowling alleys, a fitness centre, and an indoor stadium
- ***Operating system:***
  - 1 MZU2008 paging unit designed to manage speech and music in 8 different loudspeaker zones
  - 1 MMZ8004 mixer
- ***Microphone bases:***
  1 MBT8008 microphone console designed for the remote selection of the 8 loudspeaker zones
- ***Loudspeakers:***
  -CAD20/T loudspeakers and MCS1006T/W ceiling loudspeakers for the communal areas
  -CELL20/T aluminium weatherproof sound projectors for the Aquagym area
  -STUDIO.PRO9B 2-way bass reflex loudspeakers for the bowling alley
- ***Power amplifiers***
  4 MCA4060 and 4 LTU4060



Restaurants

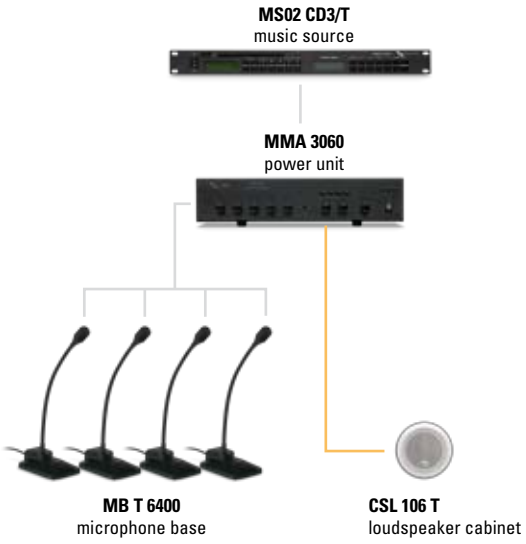
REQUIREMENTS
- 6 audio zones max. with background music
- 2 selectable music sources integrated: CD/MP3 and RADIO FM
- Independent volume control for each zone
- 1 auxiliary input for local music sources
- Use of 100V lines
- It can spread music in environments of various types and with different acoustics

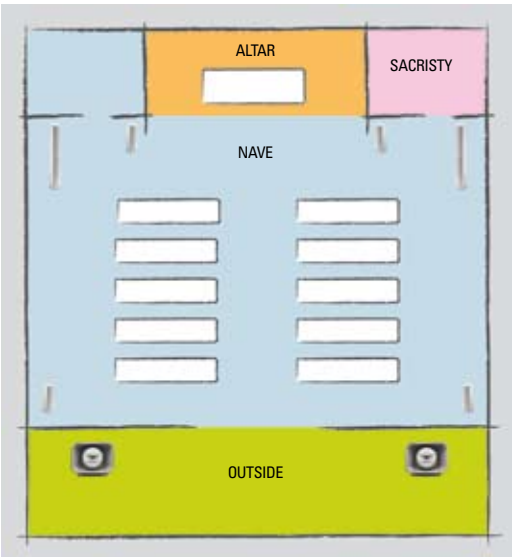




ASSOCIATED OFFICES

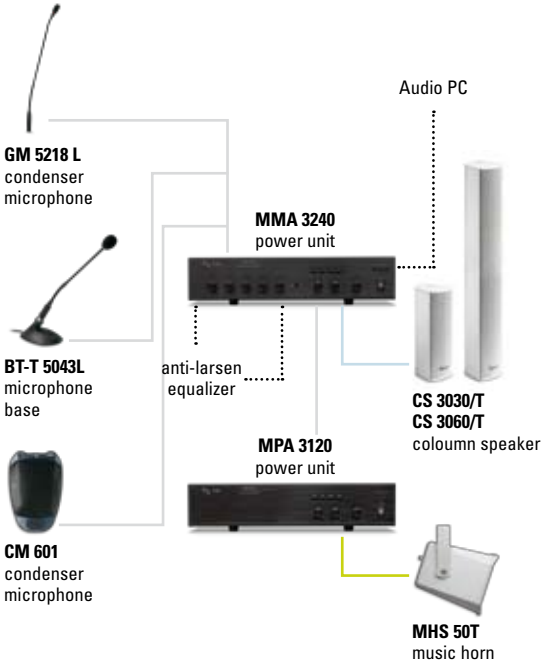
REQUIREMENTS
- Background music diffusion
- Call from all offices to the waiting room
- Use of 100V lines
- 2 selectable music sources: CD/MP3 with USB port, RADIO FM

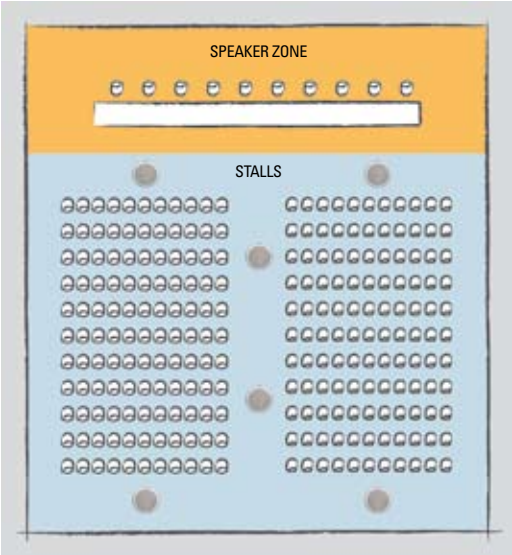




CHURCHES

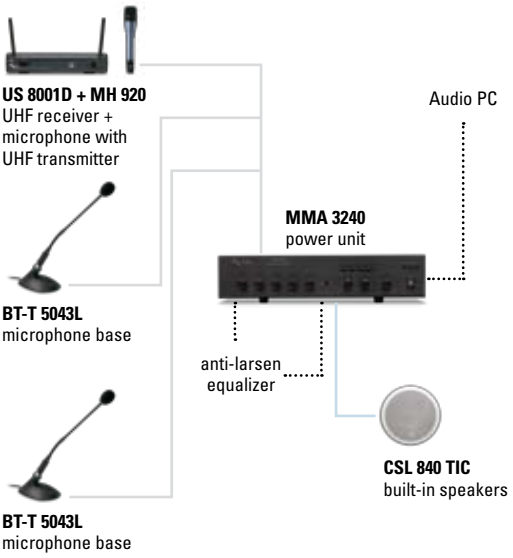
REQUIREMENTS
- 2 audio zones with independent settings, that can be muted
- 4 mic-line inputs + 2 auxiliary inputs
- High voice intelligibility
- Use of 100V lines
- Anti-feedback adjustment (against the Larsen effect) can be added in the audio chain

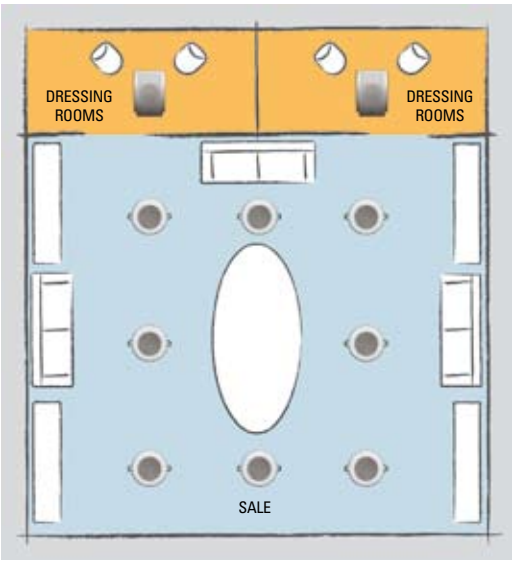




CONFERENCE HALLS

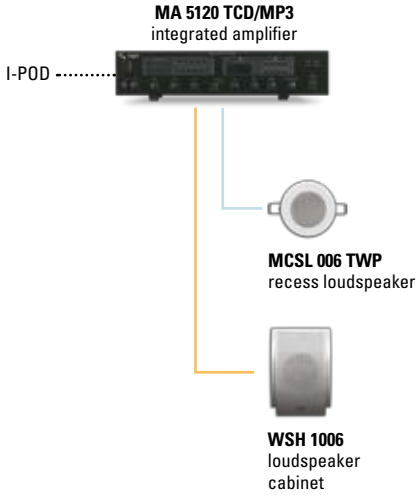
REQUIREMENTS
- 4 mic/line inputs + 2 auxiliary inputs
- High voice intelligibility
- Use of 100V lines
- Anti-feedback adjustment (against the Larsen effect) can be addedin the audio chain

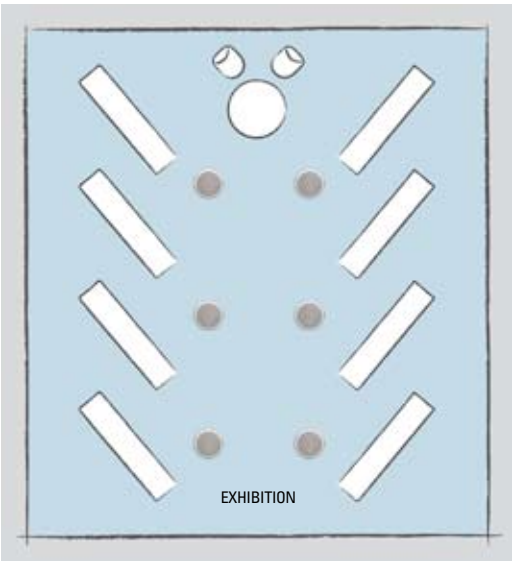




BOUTIQUE

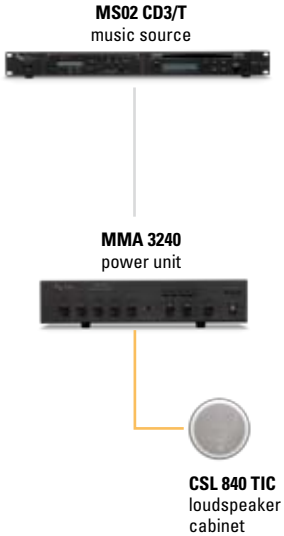
REQUIREMENTS
- 2 audio zones that can be muted
- 2 selectable music sources integrated: CD/MP3, RADIO FM
- 1 auxiliary input for a possible additional audio source
- Use of 100V lines
- High quality music play

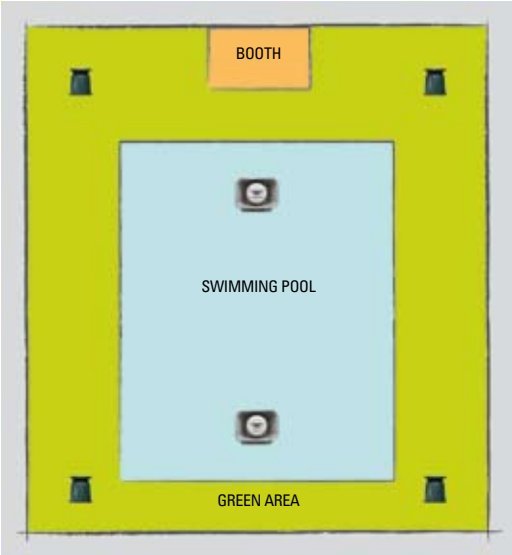




SHOW ROOMS

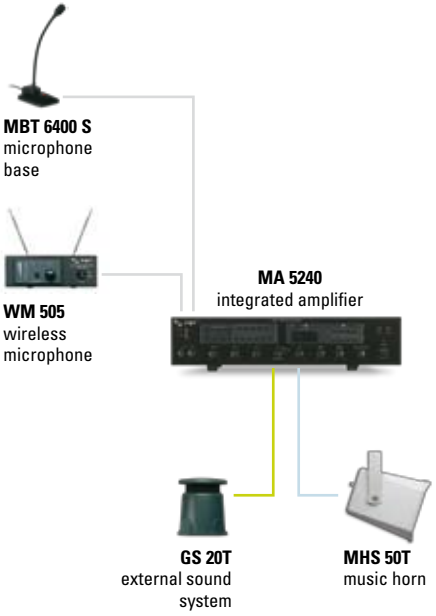
REQUIREMENTS
- Single audio zone
- 2 selectable music sources: CD/MP3 with USB port, RADIO FM
- Use of 100V lines
- High quality music play

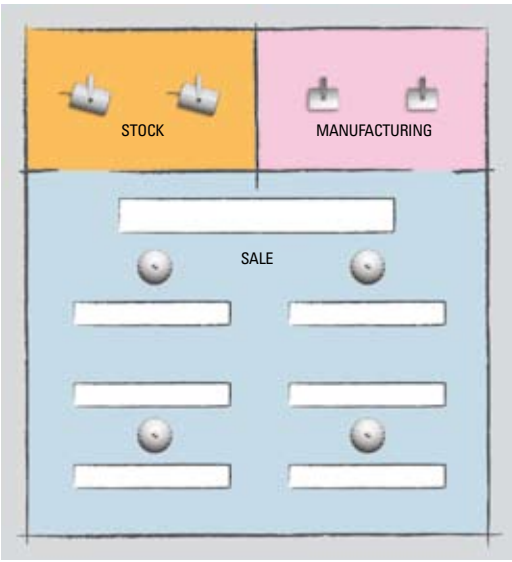




SWIMMING POOLS

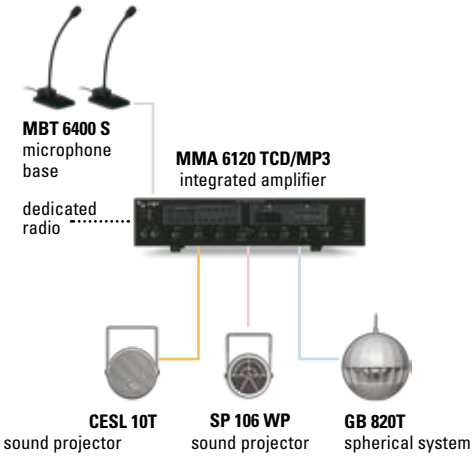
REQUIREMENTS
- Background music and message diffusion
- 2 audio zones with all-call, that can be muted
- 1 wireless microphone
- 2 selectable music sources integrated: CD/MP3, RADIO FM
- 1 auxiliary input for an external source
- Use of 100V lines

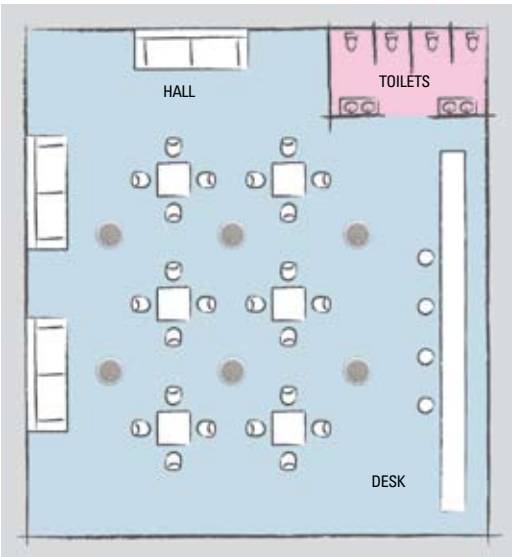




MINI-MARKETS

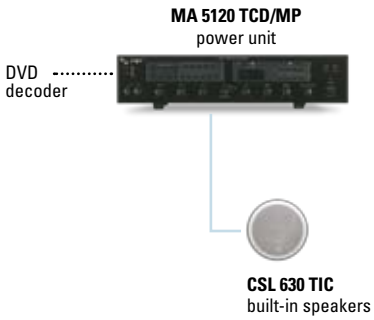
REQUIREMENTS
- 3 audio zones with all-call and background music with independent volumes
- 2 microphone consoles
- 2 selectable music sources integrated: CD/MP3, RADIO FM
- 1 player for pre-recorded messages
- 1 auxiliary input for an external source
- Use of 100V lines
- It can spread music in environments of various types and with different acoustics

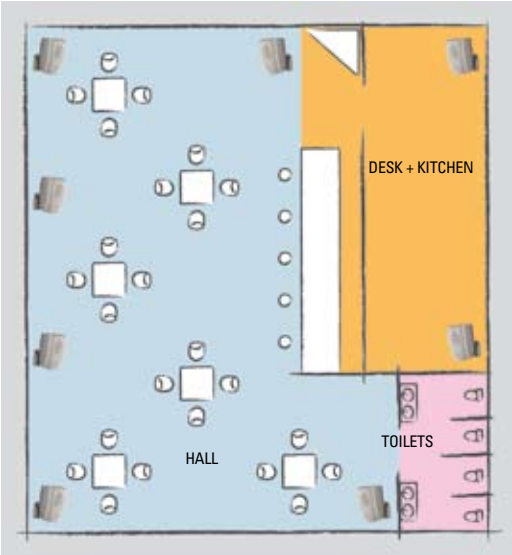




BARS

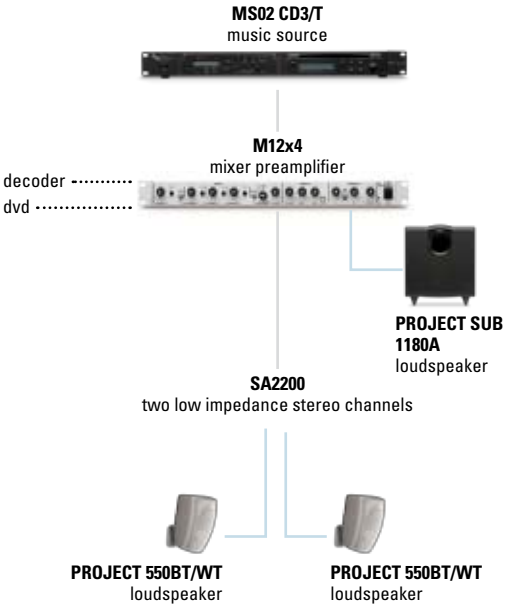
REQUIREMENTS
- Single audio zone
- selectable music sources integrated: CD/MP3 and RADIO FM
- Use of 100V lines
- 1 auxiliary input for a possible external source

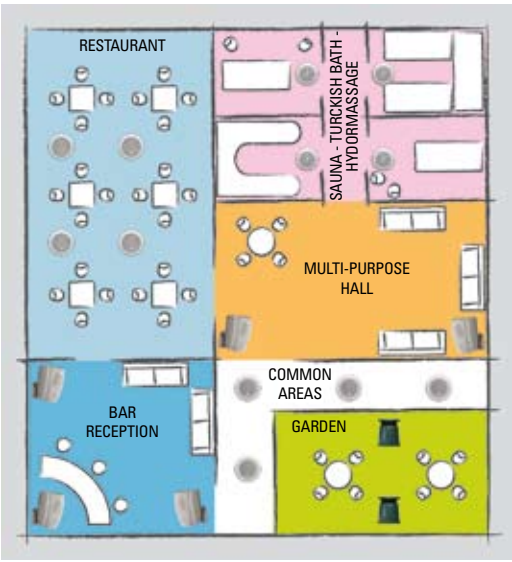




PUBS

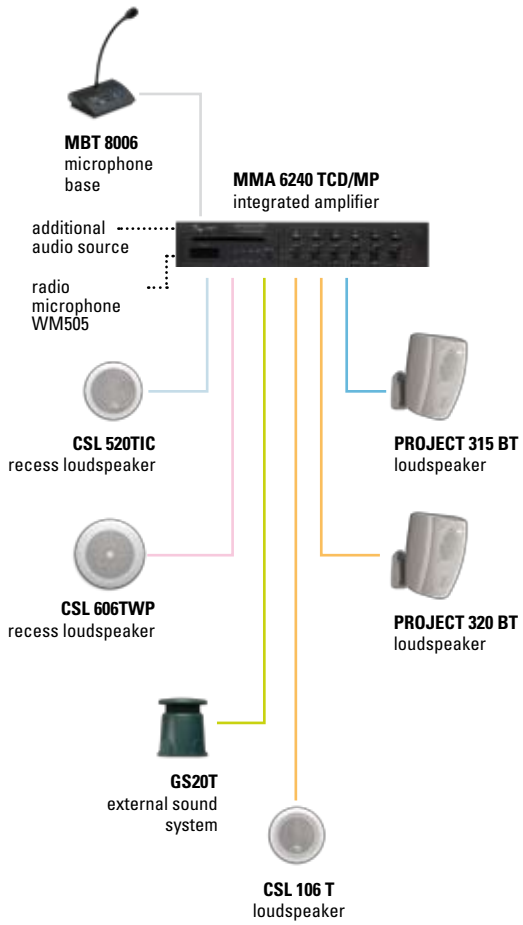
REQUIREMENTS
- Single audio zone
- 4 selectable music sources: CD/MP3 with USB key, RADIO FM and two local sources
- Use of low impedance (8ohm) lines
- Audio source stereo play
- Sound pressure level with wide dynamics
- Suitable covering of the whole audio spectrum that can be played





RESORTS

REQUIREMENTS
- 6 audio zones max. with selected-zone call and background music
- 2 selectable music sources CD/MP3 and RADIO FM
- Independent volume control for each zone
- Ideal power required within 240W
- Use of 100V lines
- It can spread music in environments of various types and with different acoustics



FBT: EXCELLENCE WITH A VAST SELECTION

FBT offers a vast and comprehensive range of speakers to meet all sound requirements and applications. Specifically designed to enable simple and safe installation, with a modern and eye-catching design, these products are the ideal choice to solve all ambient sound distribution requirements.
All product lines, from recessed ceiling loudspeakers in paint-finished metal or in plastic with dual cone or coaxial loudspeakers, speakers constructed using fire-resistant materials, IP 55-56-68 weatherproof elements, speakers designed for clean rooms or special production departments, to the industrial or entertainment sound models, have been designed according to the latest electro-acoustical parameters.
The result is absolute excellence; perfect music reproduction and optimal voice clarity and speech fidelity. Special attention has been paid to the simplification and reduction in time required for installation and network connections of the power cables, thanks to a special accessory kit supplied as standard.

The basic principles of effective surface mount ceiling loudspeaker installation

The first priority of a high quality sound reproduction system is that of providing listeners with sound information at an acoustic level that is higher than any possible background noise. The system must simultaneously assure a very wide frequency band and the maximum intelligibility. It should also guarantee a flat frequency response and uniform sound pressure to give optimum listening pleasure and clarity. To meet these requirements, the hypothetical ideal solution would be to place each sound source at an equal distance from all possible listening points.

CEILING APPLICATION

In environments offering suitable height, this ideal reference standard can be approximated by using loudspeakers with very wide response and dispersion angles that remain unchanged at different frequencies, arranged in a ceiling or shower type configuration. This gives the following benefits:

1- Maximum sound distribution uniformity
2- Maximum speech intelligibility
3- Constant quality of music reproduction
4- Reduced presence of reverberation and stationary waves in the environment
5- Sound source remains at a constant distance from the listening position
6- Ample sound energy also at the lowest level

Once the required type of loudspeaker has been chosen, and the characteristic parameters considered (particularly the relationship between the dispersion angle and the room surface area), the number of units needed to obtain constant and uniform sound diffusion can be easily calculated. The number of loudspeakers is calculated by dividing the floor area in square metres by the area of coverage of each loudspeaker on the listening plane. Figure 1 clearly illustrates the above concept.

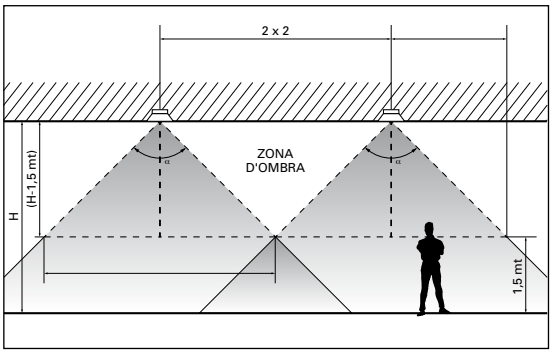


figure 1

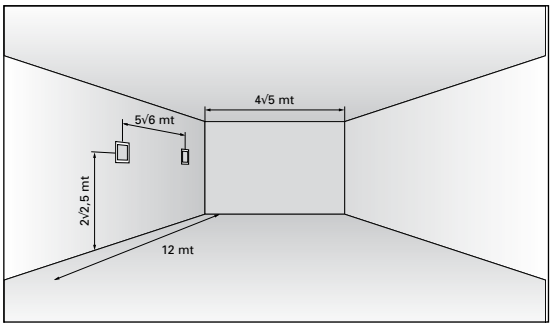


figure 2

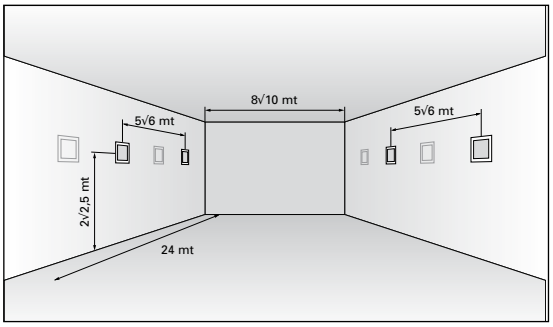


figure 3

WALL APPLICATIONS

If the architectural features of the room are not compatible with a ceiling configuration or if a "wall" application is preferred, it is essential to observe a few basic rules to obtain the best possible sound distribution. In order to maintain the listening point inside the direct signal area, both surface mounted and external loudspeakers, with power from 6 to 20 Watt, should be installed at a height of between 2 and 2.5 m. The maximum distance between adjacent loudspeakers must be no more than 5/6 metres along the length of the room, which should be no wider than 4/5 metres. For wider rooms, e.g. about 8-10 metres, it is recommended to install loudspeakers in an alternated pattern along both the opposing walls in such a way as to provide adequate coverage and maintain sound pressure at the most constant possible level in the area in question (see figures 2 and 3).

A **quick and approximate calculation** can be made of distance d, which separates the centres of two loudspeakers, when the angle of emission **A** and height of the ceiling **H** is known: **d=2*(H-1)*B** where H is the height of the ceiling expressed in metres, constant 1 is the height of the listening surface of a seated person and B is the tangent of A/2. From the above data, it is evident that for the same ceiling height H, loudspeakers with wider dispersion angles offer a larger sound diffusion area and therefore a smaller number of speakers are effectively needed.

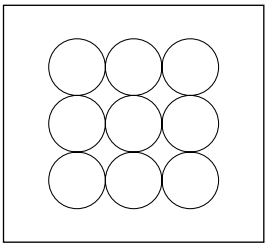


figure 4
Layout of loudspeakers for 80% coverage

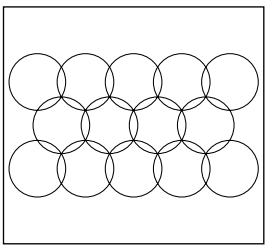


figure 5
Layout of loudspeakers for 100% coverage

Figure 4 shows the surface area covered by the sound signal with relative dark zones, and figure 5 with a different grid and greater number of loudspeakers (50%) guarantees maximum uniformity.

Angle of loudspeaker emission	Coefficient B	d with H=3m	d with H=3.5m	d with H=4m	d with H=4.5m
80	0,84	3,36	4,2	5,04	5,88
90	1,00	4	5	6	7
100	1,19	4,76	5,95	7,14	8,33
110	1,43	5,72	7,15	8,58	10,01
120	1,73	6,92	8,65	10,38	12,11
130	2,14	8,56	10,7	12,84	14,98

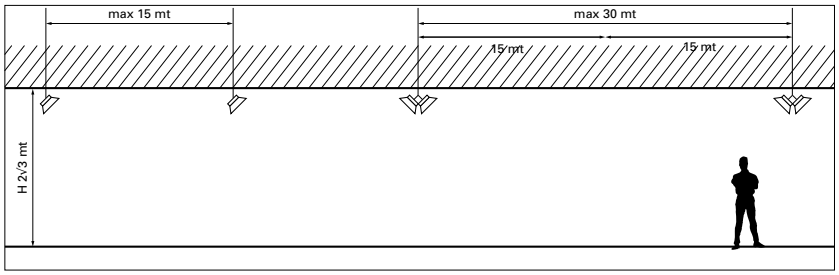


figure 6

For sound distribution in corridors, tunnels, passenger platforms in railway or underground railway stations, horn loudspeakers are used, suited for vocal reproduction, and higher quality loudspeakers called "sound projectors". In all cases these loudspeakers must be installed at a maximum distance of 15 metres from one another, mounted all in the same direction and in observance of the phase of each loudspeaker. Alternatively bi-directional versions of these loudspeakers can be considered, positioned at max. 30 metres from one another and again in observance of the connection phase. (see figure 6)

DEGREES OF PROTECTION

The characteristics of a product in terms of its resistance to the penetration of solid objects and liquids is indicated by the letters IP (International Protection) followed by two numbers. The first number identifies the protection against the ingress of solid objects, while the second indicates liquid penetration resistance, in accordance with EN standards 60529-CEI 70-1.

IP degree of protection
- The first number identifies the level of protection against the ingress of solid objects. Number from 0 to 6.
- The second number identifies the level of protection against penetration of liquids. Number from 0 to 8.

First IP number:
0 Not protected
1 Protected against the ingress of solid objects larger than 50 mm
2 Protected against the ingress of solid objects larger than 12 mm
3 Protected against the ingress of solid objects larger than 2.5 mm
4 Protected against the ingress of solid objects larger than 1 mm
5 Protected against dust penetration
6 Totally dust-proof

Second IP number:
0 Not protected
1 Protected against vertically dripping water
2 Protected against water dripping at an angle (up to 15° from the vertical)
3 Protected against rain
4 Protected against water spray
5 Protected against water jets
6 Protected against waves
7 Protected against the effects of temporary immersion
8 Protected against the effects of permanent immersion

Constant impedance lines are used above all in the case of a low number of loudspeakers, placed at a minimum distance from the amplifier (<20m).

The constant voltage connection system offers a host of advantages making it ideal for sound systems of all sizes, above all in the case of long distances. This connection system requires each loudspeaker to be equipped with its own line transformer, which adapts the impedance of the loudspeaker (usually very low) to the much higher level of the line itself. In proportion to power transmitted, the current circulating on a line at 100V is considerably lower than that circulating on wires of a constant impedance system, and consequently drops along the line are less frequent; therefore the cable section can be smaller.

The function of the device named **"AMPLIFIER" is to raise the signal of a sound source**, such as a microphone, CD player, cassette recorder or an AM/FM tuner **to a sufficient level to pilot the transducer "LOUDSPEAKER".**
The amplifier has several inputs, to which the various sound sources are connected.

The sound sources have to be mixed (mixer) and acoustically modified with tone control and equalisers to optimise listening in relation to the environment's characteristics. A terminal board is also fitted on output indicating impedance and voltage to which the loudspeaker line is connected.

A few basic rules must always be observed:
1. **When the load is on "constant impedance", this must be connected to the relative socket.** For example a load of 4 ohm must be connected to socket marked 4 ohm, and so on. The power that the load can withstand must always be greater than the amplifier's rated power.
   For example in the case of a load of 100 Watt, the amplifier must have a power equal to or less than 100 Watt.
2. **When the load is at "constant voltage", this must be connected to the sockets indicating output at constant voltage -50-70 or 100 Volt; the power that the load can withstand must always be less than or equal to the amplifier rated power. For example a load of 100 Watt, the amplifier must have a power equal to or greater than 100 Watt.**

To calculate the value of the amplifier power, simply add together the power of each loudspeaker, in the case of a "constant voltage" system.

However, on a constant impedance system, the load must have an equivalent impedance (series/parallel) equal to or greater than the minimum value indicated on the amplifier output.

The loudspeaker power supply lines, with no connected attenuator, must be with 2 sheathed wires; cables with 3 sheathed wires are required in the case of lines using attenuators which can be disabled if an emergency is activated. Adequate wire sections are required: 1.5 mm2 for lines up to 500 Watt power
2.5 mm2 for lines with power over 500Watt. The following general standards must also be observed:
- Never use a single cable (lead) for loudspeaker connections: this would cause disturbance producing a loud "HUM"
- Never use shielded cables for the loudspeaker connections: this would cause serious damage to the power units.

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